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**The files are in Adobe Acrobat Format To view them you will need**

# Service Manual

**Simplified**

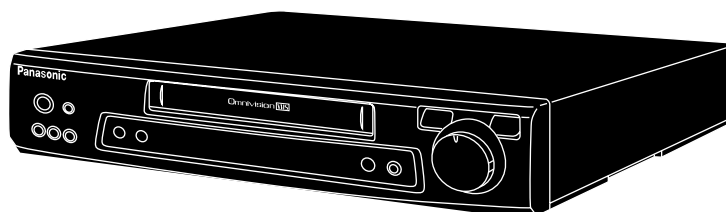
Omnivision

**VHS**

Video Cassette Recorder

**PV-7664**

**PV-7664-K**



Please use this manual together with the Service Manual for Order No. MKS9702M305  
Model No. PV-7662.

## SPECIFICATIONS

ITEM	SPECIFICATION	ITEM	SPECIFICATION
Power	Source: 120V AC $\pm 10\%$ , 60 Hz $\pm 0.5\%$	RF Out	CH 3/CH 4 switchable 72 dB $\mu$ (open voltage) 75 $\Omega$ unbalanced
	Consumption: Approx. 23 watts (Power on), Approx. 7 watts (Power off)		
Video	Head: 4 rotary heads helical scanning system	Tuner	Broadcast Channels: VHF 2 ~ 13, UHF 14 ~ 69 CATV Channels: Midband A through I (14 ~ 22) Superband J through W (23 ~ 36) Hyperband AA ~ EEE (37 ~ 64) Lowband A-5 ~ A-1 (95 ~ 99) Special CATV channel 5A (01) Ultraband 65 ~ 94, 100 ~ 125
	Input Level: VIDEO IN Jack (Phono type) 1.0 Vp-p 75 $\Omega$ unbalanced Output Level: VIDEO OUT Jack (Phono type) 1.0 Vp-p 75 $\Omega$ unbalanced Signal-to-Noise Ratio: SP: more than 43 dB LP/SLP: more than 41 dB Horizontal Resolution: Color/Monochrome: more than 230 lines		
Audio	Head: Normal Mono: 1 stationary head Hi-Fi Stereo: 2 rotary heads	Video Signal	EIA Standard (525 lines, 60 fields) NTSC Color Signal
	Input Level: AUDIO IN Jack (Phono type) -10 dBv 50k $\Omega$ unbalanced Output Level: AUDIO OUT Jack (Phono type) -8 dBv 1k $\Omega$ unbalanced	Tape Speed	SP: 1-5/16 i.p.s (33.35 mm/sec), LP: 21/32 i.p.s (16.67 mm/sec), SLP: 7/16 i.p.s (11.12 mm/sec) Record/Playback Time: 8 Hrs with 160 min. type tape used in SLP mode FF/REW Time: Less than 3 min. (120 min. type tape)
	Frequency Response: Normal Mono: SP: 100 Hz ~ 8 kHz LP: 100 Hz ~ 6 kHz SLP: 100 Hz ~ 5 kHz Hi-Fi Stereo: SP/LP/SLP: 20 Hz ~ 20 kHz		
	Signal-to-Noise Ratio: Normal Mono: SP: more than 42 dB LP/SLP: more than 40 dB Hi-Fi Stereo: SP/LP/SLP: more than 60 dB	Tape Format	Tape width 1/2" (12.7 mm) high density tape
	Wow and Flutter: Normal Mono: SP: Less than 0.2% WRMS LP: Less than 0.3% WRMS SLP: Less than 0.4% WRMS Hi-Fi Stereo: Less than 0.015% WRMS	Operating Condition	41°F(5°C) ~ 104°F(40°C) (Temperature) 10% ~ 75% (Humidity)
		Dimension	16-15/16"(430 mm) (W) X 3-7/8"(98 mm) (H) X 11-13/16"(300 mm) (D)
		Weight	7.7 lbs. (3.5 kg)

Weight and dimensions shown are approximate.  
Specifications are subject to change without notice.

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 **WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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## DIFFERENCES BETWEEN PV-7664 and PV-7662

Model PV-7664 is similar to model PV-7662.

Use this Service Manual MKS9704M315 when servicing this model.

## COMPARISON CHART BETWEEN PV-7664 & PV-7662

### MECHANICAL REPLACEMENT PARTS LIST

Page No.	Ref. No.	Section No.	Pcs/ Set	PV-7662	➡	PV-7664	Part Name
				Part No.		Part No.	
7-2	71	4	1	VYPS6730		VYPS6806	FRONT PANEL ASS'Y
---	105	4	0→1	-----		VGTS0711	SHUTTLE DIAL
7-2	121	5	1	VPGS3820		VPGS3852	PACKING CASE, PAPER
7-2	122	5	1	VQFS3323		VQFS3324	FAN BAG
7-2	123	5	1	VSQS1497		VSQS1498	INFRARED REMOTE CONTROL UNIT

### ELECTRICAL REPLACEMENT PARTS LIST

Page No.	Ref. No.	Pcs/ Set	PV-7662	➡	PV-7664	Part Name
			Part No.		Part No.	
7-3	E1	1	VEPS6028HA		VEPS6032HA	MAIN C.B.A.
---	E2	0→1	-----		VEPS3054A	ADVANCE C.B.A.
7-3	E4	1	VEPS8025B		VEPS8029A	OPERATION C.B.A.

## DIFFERENCES BETWEEN PV-7664-K and PV-7662

Model PV-7664-K is similar to model PV-7662.

Use this Service Manual MKS9704M315 when servicing this model.

## COMPARISON CHART BETWEEN PV-7664-K & PV-7662

### MECHANICAL REPLACEMENT PARTS LIST

Page No.	Ref. No.	Section No.	Pcs/ Set	PV-7662	➡	PV-7664-K	Part Name
				Part No.		Part No.	
7-2	32	1	1→0	VXLS1073		-----	CLEANER ARM UNIT
7-2	33	1	1→0	VDPS0269		-----	CLEANER ROLLER
7-2	71	4	1	VYPS6730		VYPS6806	FRONT PANEL ASS'Y
---	105	4	0→1	-----		VGTS0711	SHUTTLE DIAL
7-2	121	5	1	VPGS3820		VPGS3853	PACKING CASE, PAPER
7-2	122	5	1	VQFS3323		VQFS3360	FAN BAG
7-2	123	5	1	VSQS1497		VSQS1498	INFRARED REMOTE CONTROL UNIT


### ELECTRICAL REPLACEMENT PARTS LIST

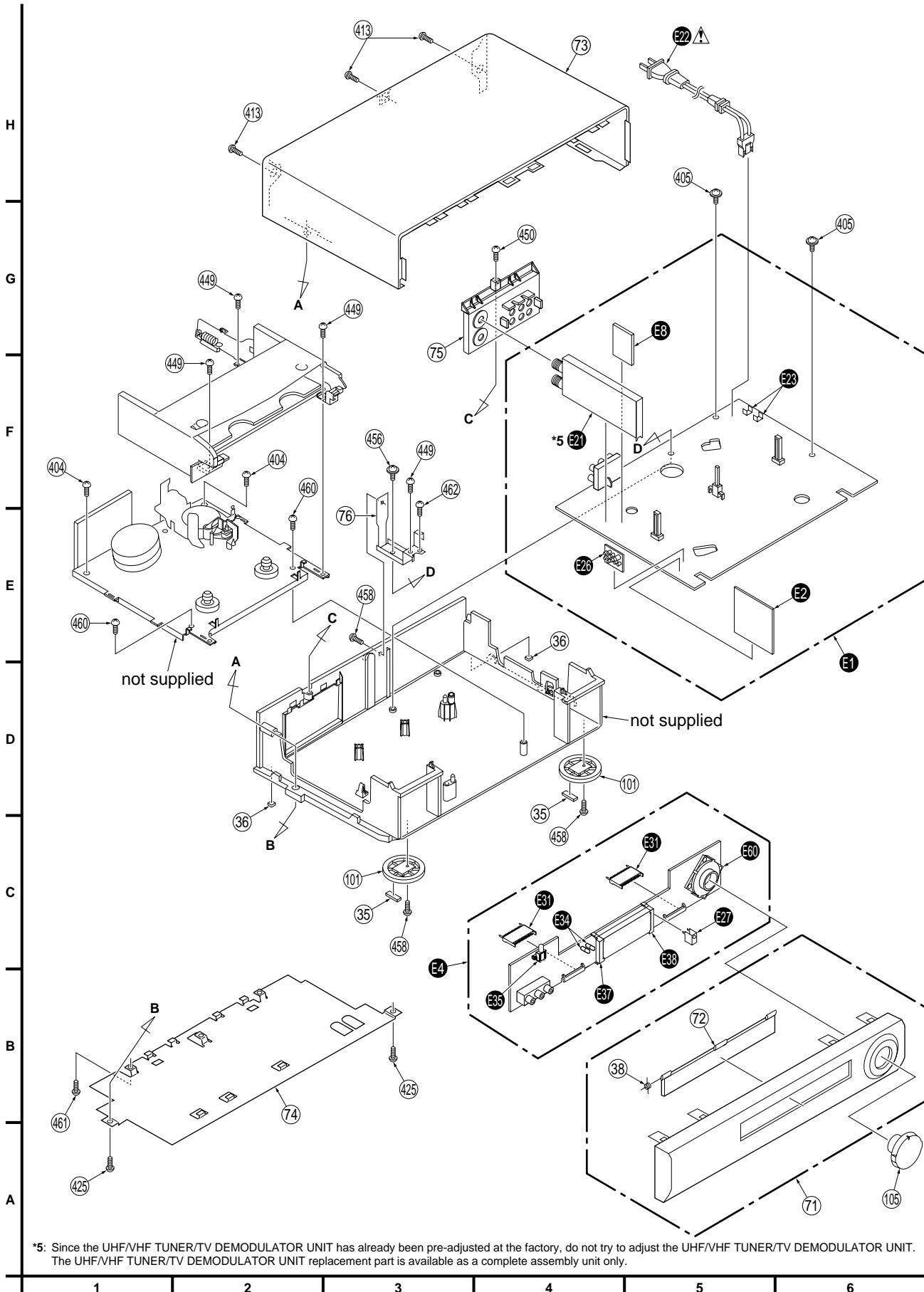
Page No.	Ref. No.	Pcs/ Set	PV-7662	➡	PV-7664-K	Part Name
			Part No.		Part No.	
7-3	E1	1	VEPS6028HA		VEPS6032HA	MAIN C.B.A.
---	E2	0→1	-----		VEPS3054A	ADVANCE C.B.A.
7-3	E4	1	VEPS8025B		VEPS8029A	OPERATION C.B.A.

# EXPLODED VIEW

## ④ CHASSIS FRAME AND CASING PARTS SECTION

### IMPORTANT SAFETY NOTICE

COMPONENTS IDENTIFIED BY THE SIGN  HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.



# REPLACEMENT PARTS LIST

## BEFORE REPLACING PARTS, READ THE FOLLOWING:

1. Use only original replacement parts:  
To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list.
2. **IMPORTANT SAFETY NOTICE**  
Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components, use only the specified parts.
3. **SPECIAL NOTE**  
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this service manual.
4. Parts with no Ref. No. in "EXPLODED VIEW" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.
5. Parts different in shape or size may be used. However, only interchangeable parts will be supplied as service replacement parts.
6. The parts which "AKEI" is indicated in Remarks column will be supplied from AKEI factory.

## Electrical Replacement Notes

1. Item numbers with capital letter E (Example: E1, E2,...) in the Ref. No. column are shown in the exploded views. The E item numbers are also printed on the same page at the top of the column.
2. The parts with "■" mark are supplied individually or as a unit. The parts with "▲" mark are supplied individually or as a unit, and are included in "■" parts listed directly above in the parts list.
3. Unless otherwise specified;  
All resistors are in ohms, 1/4W, +/-5%, carbon, K = 1,000 ohm, M = 1,000 kohm.  
All capacitors are in microfarads, P = micromicrofarad, +/-10%.  
All coils are in microhenries, M = 1,000 microhenry, +/-10%.
4. Abbreviation  
RTL: Retention Time Limited  
This indicates that the retention time is limited for this item. After the discontinuation of this item in production, it will no longer be available.  
NR: Non Repairable Board Ass'y  
MGF CHIP: Metal Glaze Film Chip  
C CHIP: Ceramic Chip  
COMPLX CMP: Complex Component  
W FLMPRF: Wirewound Flameproof  
C.B.A.: Circuit Board Assembly  
P.C.B.: Printed Circuit Board  
E.S.D.: Electrostatically Sensitive Devices
5. **SERVICE OF CHIP PARTS**  
When servicing chip parts, please use a soldering iron of less than 30 watts. Refer to "IC, TRANSISTOR AND CHIP PART INFORMATION" page.
6. The parts with "●" are 0 ohm resistor. When replacing, a wire can be substituted for a 0 ohm resistor.
7. IC6301, IC6401 replacement note:  
The manufacturing part number is TMP47C215NF831 or UPD17217GT-538. However, to order the part, use service order part number T47C215NF831 or D17217GT-538.

## ELECTRICAL REPLACEMENT PARTS LIST

(E1, E2, E4)

Ref. No.	Part No.	Part Name	Remarks
<b>PRINTED CIRCUIT BOARD ASSEMBLY</b>			
E1	VEPS6032HA	MAIN C.B.A.	■ E.S.D. RTL
E2	VEPS3054A	ADVANCE C.B.A.	▲ E.S.D. RTL
E4	VEPS8029A	OPERATION C.B.A.	■ E.S.D. RTL
<b>MAIN C.B.A.</b>			
<b>INTEGRATED CIRCUITS</b>			
IC1001	PS2501-1-X	IC, LINEAR ERROR V. DET	▲
	OR 0N3131-R.KT	IC, LINEAR ERROR V. DET	▲
	OR 0N3131-S.KT	IC, LINEAR ERROR V. DET	▲
IC3001	AN3475FBP	IC, LINEAR VIDEO/AUDIO PROCESS	
IC3101	MN3885S	IC, CCD 1H DELAY	E.S.D.
IC3201	MN3890S	IC, CCD 1H DELAY	E.S.D.
IC3301	LC74725M9630	IC, LOGIC CHARACTER GENERATOR	E.S.D.
IC4201	AN3962FB-V	IC, LINEAR HI-FI AUDIO PROCESS	
IC4351	M62302FP	IC, LINEAR LEVEL METER CONTROL	
IC6001	MN675048A5G	IC, 8BIT MICROPROCESSOR SYSTEM CONTROL/SERVO	E.S.D.
IC6002	CNA1801N	REEL SENSOR UNIT	
IC6003	CNA1801N	REEL SENSOR UNIT	
IC7501	MN675048A5F	IC, 8BIT MICROPROCESSOR TIMER	E.S.D.
<b>TRANSISTORS</b>			
Q1001	2SC4533LP.KT		▲
	OR 2SC5130LF608		▲
Q1002	2SD2259		
Q1003	2SD601A(R,S)	CHIP	
Q1004	2SB709A(Q,R)	CHIP	
Q1005	2SB709A(Q,R)	CHIP	
Q1051	2SD2375(P,Q)		
Q1052	2SD601(R,S)	CHIP	
Q3001	2SB709(R,S)	CHIP	
Q3201	1M21	COMPLX CMP SI NPN/PNP CHIP	
Q3202	2SB709(R,S)	CHIP	
Q3875	2SB709(R,S)	CHIP	
Q4001	2SB709A(Q,R,S)	CHIP	
Q4002	2SD601A(R,S)	CHIP	
Q4003	2SD601A(R,S)	CHIP	
Q4101	2SD601(R,S)	CHIP	
Q4601	2SD601(R,S)	CHIP	
Q6002	2SB709(R,S)	CHIP	
Q6003	2SD601(R,S)	CHIP	
Q6009	VEK55522	PHOTO SENSOR UNIT	
Q6010	VEK55522	PHOTO SENSOR UNIT	
Q7501	2SB709(R,S)	CHIP	
Q7502	2SD601(R,S)	CHIP	
Q7504	2SD601(R,S)	CHIP	
<b>DIODES</b>			
D1001	S1WBA40		▲
	OR S1WBA60		▲
D1002	ERA18-04V3		
D1003	ERA18-04V3		
D1005	ERA18-04V3		
D1006	RU3YXLC1		
D1007	ERA18-04V3		
D1008	ERB81-004V1		
D1009	AK03V0		
D1011	MA4051NH	ZENER	5.1V
D1012	MA858		
D1013	MA165		
D1015	MA7180A-TR	ZENER	18V ▲
	OR MA7180B-TR	ZENER	18V ▲
D1016	MA165		
D1051	MA4100N	ZENER	10V
D1052	MA165		
D1053	MA165		
D3004	MA4091-M	ZENER	9.1V

Ref. No.	Part No.	Part Name	Remarks
D4201	MA165		
D6001	VEKS5521	SENSOR LED UNIT	
D6201	MA165		
D6202	MA165		
D6203	MA165		
D6204	MA165		
D7002	MA4300-TA	ZENER 30V	
D7501	MA165		
D7502	MA165		
D7505	MA165		
		<b>RESISTORS</b>	
R1001	VRESC2TK275T	+-10% 1/2W 2.7M $\Delta$	
R1003	VRESE2TJ334	1/2W 330K	
R1004	ERG2SJW333E	METAL OXIDE 2W 33K	
R1005	ERGLSJW560E	METAL OXIDE 1W 56	
R1006	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R1007	ERDS2TJ101	100	
R1008	ERDS2TJ392	3.9K	
R1010	ERD25FYJ100T	10 $\Delta$	
R1011	ERD25FYJ4R7T	4.7 $\Delta$	
R1014	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1015	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1016	ERJ8GEYJ562V	MGF CHIP 1/8W 5.6K	
R1017	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R1018	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R1019	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R1020	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R1022	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1024	ERD2FCVG330T	+-2% 33 $\Delta$	
R1051	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R1052	ERDS2TJ153	15K	
R1053	ERDS2TJ153	15K	
R3002	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R3003	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3004	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R3005	ERDS2TJ101	100	
R3021	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R3022	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R3023	ERJ6GEYJ121V	MGF CHIP 1/10W 120	
R3027	ERJ6GEYJ821V	MGF CHIP 1/10W 820	
R3029	ERJ6GEYJ125V	MGF CHIP 1/10W 1.2M	
R3030	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3031	ERJ6GEYJ474V	MGF CHIP 1/10W 470K	
R3033	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3034	ERJ6GEYJ121V	MGF CHIP 1/10W 120	
R3035	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3036	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R3041	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R3202	ERJ6GEYJ821V	MGF CHIP 1/10W 820	
R3204	EVMF6SA00B23	VARIABLE 2K	
R3205	EVNCA083B13	VARIABLE 1K	
R3206	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R3207	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3208	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R3209	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R3210	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3211	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3212	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R3213	ERJ6GEY0R00V	MGF CHIP 1/10W 0 $\bullet$	
R3214	ERJ6GEYJ273V	MGF CHIP 1/10W 27K	
R3301	ERJ6GEY0R00V	MGF CHIP 1/10W 0 $\bullet$	
R3302	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3874	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3875	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4001	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4002	ERJ6GEYJ334V	MGF CHIP 1/10W 330K	
R4003	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R4004	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4005	ERJ6GEYJ225V	MGF CHIP 1/10W 2.2M	
R4006	ERJ6GEYJ681V	MGF CHIP 1/10W 680	
R4007	ERJ6GEYJ821V	MGF CHIP 1/10W 820	
R4008	ERJ6GEYG223V	MGF CHIP +-2% 1/10W 22K	
R4010	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
R4011	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4012	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4014	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	

Ref. No.	Part No.	Part Name	Remarks
R4015	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R4017	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4019	VCY5ARH102KB	CERAMIC 50V 1000P	
R4028	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R4101	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
R4102	ERJ6GEYG333V	MGF CHIP +-2% 1/10W 33K	
R4103	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4201	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4202	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4203	ERJ6GEYJ511V	MGF CHIP 1/10W 510	
R4204	ERJ6GEYJ511V	MGF CHIP 1/10W 510	
R4205	ERJ6GEYG333V	MGF CHIP +-2% 1/10W 33K	
R4206	ERJ6GEYG333V	MGF CHIP +-2% 1/10W 33K	
R4207	ERJ6GEYG153V	MGF CHIP +-2% 1/10W 15K	
R4208	ERJ6GEYG153V	MGF CHIP +-2% 1/10W 15K	
R4209	ERJ6GEYG333V	MGF CHIP +-2% 1/10W 33K	
R4210	ERJ6GEYG333V	MGF CHIP +-2% 1/10W 33K	
R4211	ERJ6GEYG153V	MGF CHIP +-2% 1/10W 15K	
R4212	ERJ6GEYG153V	MGF CHIP +-2% 1/10W 15K	
R4213	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4214	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4215	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4216	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4217	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4218	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4219	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R4220	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4221	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4222	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R4226	ERJ6GEY0R00V	MGF CHIP 1/10W 0 $\bullet$	
R4230	ERJ6GEY0R00V	MGF CHIP 1/10W 0 $\bullet$	
R4234	ERJ6GEY0R00V	MGF CHIP 1/10W 0 $\bullet$	
R4240	ERJ6GEY0R00V	MGF CHIP 1/10W 0 $\bullet$	
R4241	ERA6YEB153V	MGF CHIP +-0.1% 1/10W 15K	
R4243	ERDS2TJ152	1.5K	
R4244	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R4245	ERJ6GEY0R00V	MGF CHIP 1/10W 0 $\bullet$	
R4246	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4247	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
R4248	ERJ6GEY0R00V	MGF CHIP 1/10W 0 $\bullet$	
R4249	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4351	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4352	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4353	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R4354	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R4355	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R4356	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R4601	ERJ6GEYJ123V	MGF CHIP 1/10W 12K	
R4602	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4604	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4605	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R4606	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4607	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6001	ERDS2TJ561	560	
R6002	ERDS2TJ561	560	
R6004	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R6005	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6006	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6012	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6014	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6021	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6025	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6026	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6029	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6030	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6033	ERDS2TJ681	680	
R6048	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6049	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6051	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6052	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6053	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6058	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6062	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
R6063	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6064	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6066	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6069	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6070	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	





(E2, E8, E21, E23, E26)

Ref. No.	Part No.	Part Name	Remarks
		<b>COILS</b>	
L1001	ELF15N005AB	LINE FILTER 0.5A 18M $\Delta$	
	OR VLQ50166	LINE FILTER 0.5A 18M $\Delta$	
	OR VLQ50167	LINE FILTER 0.5A 18M $\Delta$	
L1002	VLQ5AB7D220K	22	
L1003	VLQ5AB7D100K	10	
L1006	VLPS0083		
L3014	VLQSH02R470K	47	
L3016	ELESN330KA	33	
L3018	ELESN470KA	47	
L3101	ELESN101KA	100	
L3201	ELESN101KA	100	
L3202	ELESN121KA	120	
L3203	VLQSH02R220K	22	
L3302	VLQSH02R180J	+/-5% 18	
L4001	ELELN153KA	15M	
L4101	ELESN471KA	470	
L7001	ELESN120KA	12	
L7002	ELESN101KA	100	
L7004	VLPS0092	CHIP	
		<b>CRYSTAL OSCILLATOR</b>	
X3010	VXS0195		
X6001	VXS0191		
X7501	VXS0191		
		<b>PIN HEADERS</b>	
P1001	VJPS1154	CONNECTOR 2P	
P3001	VJPS0885	CONNECTOR 20P	
P4001	VJSS0888	FE CONNECTOR 2P	
P6001	VJPS0712	CONNECTOR 19P	
P6002	VJPS0881	CONNECTOR 8P	
P6201	VJPS0883	CONNECTOR 14P	
P6351	VJPS0712	CONNECTOR 19P	
		<b>SWITCHES</b>	
SW6001	VSHS0058	LEAF SWITCH-SAFETY TAB	
SW6002	VSSS0159	MODE SELECT SWITCH	
SW7001	VSSS0152	SELECT SWITCH	
		<b>FUSE &amp; PROTECTOR</b>	
F1001	VFS0003A16	FUSE 125V 1.6A $\Delta$	
	OR VFS00028A16	FUSE 125V 1.6A $\Delta$	
	OR VFS00030B16	FUSE 125V 1.6A $\Delta$	
	OR XBA1C16NU100	FUSE 125V 1.6A $\Delta$	
PR1001	ICP-N38-TP1	IC PROTECTOR 1.5A $\Delta$	
	OR UNH000600A	IC PROTECTOR 1.5A $\Delta$	
PR1002	ICP-N38-TP1	IC PROTECTOR 1.5A $\Delta$	
	OR UNH000600A	IC PROTECTOR 1.5A $\Delta$	
		<b>TRANSFORMER</b>	
T1001	ETS28AD1F5NP	$\Delta$	
	OR VTPS0034-1	$\Delta$	
	OR VTPS0038-1	$\Delta$	
	OR VTPS0040-1	$\Delta$	
T4101	EIQ7QF018Q		
		<b>PRINTED CIRCUIT BOARD ASSEMBLY</b>	
E2	VEPS3054A	ADVANCE C.B.A. $\blacktriangle$ E.S.D.	
E8	VEPS4017A	SPATIALIZER C.B.A. $\blacktriangle$	
		<b>MISCELLANEOUS</b>	
JK3001	VJHS0727	A/V JACK SOCKET	
E21	VEQS0603	TUNER,UHF/VHF NR	
E23	VJSS0896	FUSE HOLDER	
E26	VCRS0213	IC, HYBRID MTS/SAP AUDIO PROCESS	

Ref. No.	Part No.	Part Name	Remarks
		<b>ADVANCE C.B.A.</b>	$\blacktriangle$
		<b>INTEGRATED CIRCUITS</b>	
IC3801	AN3296S	IC, LINEAR SYNC DETECTOR	
IC3802	MC14528BFEL	IC, CMOS STANDARD LOGIC MULTI VIBRATOR	E.S.D.
IC3803	AN1393S	IC, LINEAR COMPARATOR	
IC3850	MC14538BFEL	IC, CMOS STANDARD LOGIC MULTI VIBRATOR	E.S.D.
IC3854	MC74HC74AFL1	IC, CMOS STANDARD LOGIC DUAL FLIP FLOP	E.S.D.
IC4801	LM833M	IC, LINEAR OP AMP	
		<b>TRANSISTORS</b>	
Q3802	2SD601(R,S)	CHIP	
Q3803	2SB709(R,S)	CHIP	
Q3807	2SD601(R,S)	CHIP	
Q3808	2SD601(R,S)	CHIP	
Q3809	2SD601(R,S)	CHIP	
Q3810	UN2212	CHIP	
Q3856	XN4601	COMPLX CMP SI NPN/PNP CHIP	
Q3857	XN4601	COMPLX CMP SI NPN/PNP CHIP	
Q3858	UN2212	CHIP	
Q3860	UN2212	CHIP	
Q3861	UN2212	CHIP	
Q3862	UN2212	CHIP	
Q4801	2SD601(R,S)	CHIP	
Q4802	2SB709(R,S)	CHIP	
Q4803	UN2212	CHIP	
Q4804	UN2212	CHIP	
		<b>DIODES</b>	
D3802	MA151K	CHIP	
D3803	MA110	CHIP	
D3804	MA151K	CHIP	
D4801	MA151K	CHIP	
D4802	MA151K	CHIP	
		<b>RESISTORS</b>	
R3806	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3808	ERJ6GEYG122V	MGF CHIP +/-2% 1/10W 1.2K	
R3809	ERJ6GEYG102V	MGF CHIP +/-2% 1/10W 1K	
R3810	ERJ6GEYG102V	MGF CHIP +/-2% 1/10W 1K	
R3811	ERJ6GEYG272V	MGF CHIP +/-2% 1/10W 2.7K	
R3814	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R3815	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R3816	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R3817	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R3818	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3819	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R3820	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R3821	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R3822	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3823	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R3824	ERJ6GEYJ124V	MGF CHIP 1/10W 120K	
R3825	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3826	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3827	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R3828	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3829	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R3832	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3833	ERJ6GEYG123V	MGF CHIP +/-2% 1/10W 12K	
R3834	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3835	ERJ6GEYG103V	MGF CHIP +/-2% 1/10W 10K	
R3837	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R3838	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R3839	ERJ6GEYG184V	MGF CHIP +/-2% 1/10W 180K	
R3840	ERJ6GEYG822V	MGF CHIP +/-2% 1/10W 8.2K	
R3841	ERJ6GEYG153V	MGF CHIP +/-2% 1/10W 15K	
R3843	ERJ6GEYG472V	MGF CHIP +/-2% 1/10W 4.7K	
R3845	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3846	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3847	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	



(E27, E31, E34, E35, E37, E38, E60)

[illegible]

# COMMERCIAL ADVANCE OPERATION GUIDE



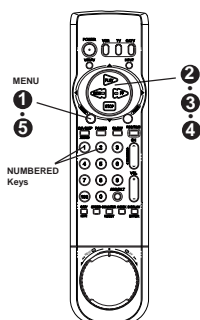
## Tape Operation

### COMMERCIAL ADVANCE™

COMMERCIAL ADVANCE™ detects and marks the beginning and end of commercials on your tape for recordings over 15 minutes in length. When the COMMERCIAL ADVANCE™ marked tape is played back, the VCR automatically advances through the commercial segments at high speed. You can also set this feature to Manual so as to have more control over the advance process. The effectiveness of this system can vary due to differences in the way television stations broadcast.

#### Check list before you begin

- ☐ All connections have been made and the One Time Setup is completed.
- ☐ Your TV and VCR are plugged in and turned on.
- ☐ TV is tuned to the VCR channel (CH 3 or 4).



**NOTE**

- When using the timer to record two adjacent shows on the same channel, better accuracy can be obtained by programming each show separately.

COMMERCIAL ADVANCE® is a trademark of SRT, Inc.  
A Jerry Iggolden invention licensed in association with Arthur D. Little Enterprises, Inc.

U.S. Pat. No. 5,333,091  
other patents pending

### COMMERCIAL ADVANCE™ Marking

When the COMMERCIAL ADVANCE RECORD setting is ON, the VCR automatically rewinds the tape after a recording has been made and marks the beginning and end of any detected commercial blocks. After marking is done, the tape is returned to the end of the recording. Commercials are not erased from the tape.

- 1 Push MENU to display the menu screen.

- 2 Push  $\blacktriangle$  to select "SET UP VCR," and then push  $\blacktriangleright$  to display the "SET UP VCR" screen.

- 3 Push  $\blacktriangle$  to select "SET UP COMMERCIAL ADV.," and then push  $\blacktriangleright$  to display the "SET UP COMMERCIAL ADV." screen.

- 4 Push  $\blacktriangle$  to select "C/A RECORD," and then push  $\blacktriangleright$  to set "ON" or "OFF."

**ON** Timer recordings, VCR Plus+ recordings, and One Touch Recordings are marked automatically.

The screen at right appears when STOP is pushed during a normal recording. Select one of the following:

Push the 1 NUMBERED key to mark the recording later.

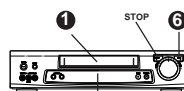
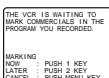
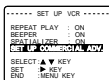
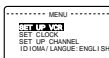
Push the 2 NUMBERED key, to mark the recording later, after the power has been turned off.

If the tape is rewound and another recording started before the power is turned off, the commercials may not be marked correctly.

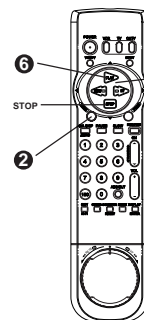
Push MENU to cancel the marking of this recording.

**OFF** The VCR will not mark commercials. Off should be selected when you are editing or dubbing a tape, or when you simply do not wish to use this feature.

- 5 Push MENU three times to return to the normal screen.



Multi Function Display



### Marking an Unmarked Tape

This feature allows you to turn your existing unmarked tapes into Commercial Advance tapes. The VCR will scan the previously recorded tape for commercial segments, and then mark it.

- 1 Insert the pre-recorded tape with record tab.

- Recorded segments must be at least 15 minutes in length or marking cannot be performed.
- If necessary, push REW or FF to place the tape at the start point of a recorded segment of over 15 minutes for commercial marking.

- 2 Push MENU to display the menu screen.

- 3 Push  $\blacktriangle$  to select "SET UP VCR," and then push  $\blacktriangleright$  to display the "SET UP VCR" screen.

- 4 Push  $\blacktriangle$  to select "SET UP COMMERCIAL ADV.," and then push  $\blacktriangleright$  to display the "SET UP COMMERCIAL ADV." screen.

- 5 Push  $\blacktriangle$  to select "MARK UNMARKED TAPE," and then push  $\blacktriangleright$  to display the screen at right.

- 6 Push PLAY to start commercial marking.

\* "C/A" will appear on the Multi Function Display.

#### NOTE:

If 15 minutes after marking is started an already marked portion of tape is encountered, a message will appear to alert you. Push STOP to mark the marked portion of tape. If within 15 minutes after marking has begun, an already marked portion of tape is encountered, a message will appear to alert you. Push STOP to remove the message.

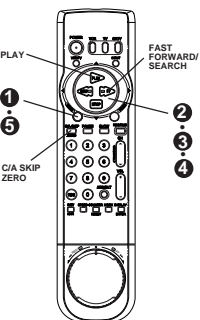
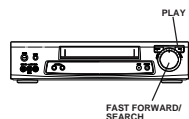
- The selection made in step 4 remains set unless there is a power outage in which case the original factory setting will be restored.
- If the time interval between scheduled timer recordings is insufficient for marking, the VCR will wait until all recordings are finished before marking them.
- The VCR can store up to 4 programs or 40 commercial blocks in memory at one time. As marking is performed, memory storage space is replenished. However, if storage capacity is exceeded, the remaining commercials will not be marked.
- The VCR will playback the tape at normal speed. Then, the tape is rewound and marking will be performed.

## Tape Operation (continued)

### COMMERCIAL ADVANCE™

#### Check list before you begin

- ☐ All connections have been made and the One Time Setup is completed.
- ☐ Your TV and VCR are plugged in and turned on.
- ☐ TV is tuned to the VCR channel (CH 3 or 4).



### COMMERCIAL ADVANCE™ Playback

When playing back recordings which have been marked using the COMMERCIAL ADVANCE™ feature, you can either set the VCR to automatically advance through marked commercial blocks, or set it so that commercials are only skipped on your command.

- 1 Push MENU to display the menu screen.

- 2 Push  $\blacktriangle$  to select "SET UP VCR," and then push  $\blacktriangleright$  to display the "SET UP VCR" screen.

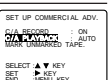
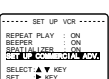
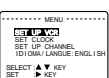
- 3 Push  $\blacktriangle$  to select "SET UP COMMERCIAL ADV.," and then push  $\blacktriangleright$  to display the "SET UP COMMERCIAL ADV." screen.

- 4 Push  $\blacktriangle$  to select "C/A PLAYBACK," and then push  $\blacktriangleright$  to set "AUTO" or "MANU(al)."

**AUTO** The VCR will automatically advance through marked commercial blocks recorded on the tape and then resume playback.

**MANU(al)** The VCR will advance through commercials only when C/A SKIP ZERO is pushed. Playback will resume when the end mark of a commercial block is found, or a new recording or blank portion is detected, or after eight minutes.

- 5 Push MENU three times to return to the normal screen.



- The selection made in step 4 remains set unless there is a power outage in which case the original factory setting will be restored.
- A commercial may not be skipped if playback is started in the middle of a commercial, only a single isolated commercial is shown, or an individual commercial is longer than one minute. Push FAST FORWARD/SEARCH to quickly advance through the commercial.
- Part of a recorded program may be skipped over if the program portion between commercials is less than one minute, or there are frequent dark and quiet scenes. Rewind the tape to the beginning of the skipped portion and push PLAY.

The most commonly asked questions about COMMERCIAL ADVANCE™ are answered below.

Question	Answer
How fast does the VCR advance through commercials?	The VCR advances through a 3-minute commercial block in about 8 to 12 seconds if the tape speed is SLP. In SP, it takes about 25 to 35 seconds.
Are commercials advanced through only when I playback a recording?	Yes. The commercials are not marked until after the recording is finished.
Are commercials still recorded on the tape in case I choose to view them sometime?	Yes. By setting the C/A PLAYBACK to MANU(al), you can view or advance through commercials as desired.
Does COMMERCIAL ADVANCE™ work in all recording speeds?	Yes. COMMERCIAL ADVANCE™ works in SP, LP, and SLP.
Does the VCR advance through commercials each time I playback tapes which were recorded using COMMERCIAL ADVANCE™?	Yes. As long as C/A PLAYBACK is set to AUTO, the VCR should advance through commercials each time the tape is played back.
After marking commercials, does the VCR stop at the end of the tape, or rewind to the beginning?	The tape stops at the end of the recording so that any additional timer recordings can be performed.
Can I play my COMMERCIAL ADVANCE™ recordings in non-COMMERCIAL ADVANCE™ VCRs?	Yes. COMMERCIAL ADVANCE™ marked recordings will play in non-COMMERCIAL ADVANCE™ VCRs, but commercials will not be advanced through.
Does the marking process interfere with other programmed recordings?	No. If the interval between 2 or more timer programs is not sufficient to mark the recording, marking will be done after all recordings are complete and the power goes off.
What happens if I cancel the marking in progress so I can use the VCR?	Marking will be resumed when the VCR's power is turned off as long as the tape has not been ejected.
What if part of my program is advanced through along with the commercials?	Rewind the tape to where the program should have started, and push PLAY to view the program.
Can I mark a recording that was made another VCR?	Yes. See "Marking an Unmarked Tape."

**Additional Notes:**

- Because of the various ways in which commercials are broadcast, the VCR may not be able to recognize all commercials.
- If a timer recording is scheduled for the middle of the night, please be aware that the VCR will make some noise as it rewinds and fast forwards the tape while marking commercials.

COMMERCIAL ADVANCE® is a trademark of SRT, Inc.  
A Jerry Iggolden invention licensed in association with Arthur D. Little Enterprises, Inc.  
U.S. Pat. No. 5,333,091  
other patents pending

# DISASSEMBLY/ASSEMBLY PROCEDURES

## DISASSEMBLY/ASSEMBLY PROCEDURES OF CABINET

### Front Panel Ass'y

#### Disassembly Procedure

1. Pull off the Shuttle Dial.
2. Release Locking Tab (B) on the left side.
3. Release 2 Locking Tabs (C) on the top left.
4. Release 2 Locking Tabs (D) on the top right.
5. Release Locking Tab (E) on the right side.
6. Release 3 Locking Tabs (F) on the bottom side. Then, remove the Front Panel Ass'y.

#### Note:

Work carefully so as not to break the Tabs.

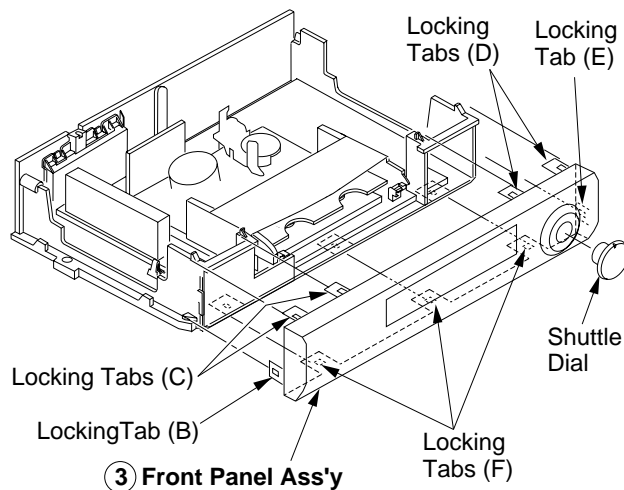


Fig. D4-1

### Reassembly Notes

#### 1. Installation of Front Panel Ass'y

##### CAUTION

- 1) When installing the Front Panel Ass'y, swing the Cassette Door -Lid all the way open until the Cassette Door tab clears the Opener Lever.
- 2) Make sure that all locking tabs are aligned properly. Then, press the Front Panel straight in.

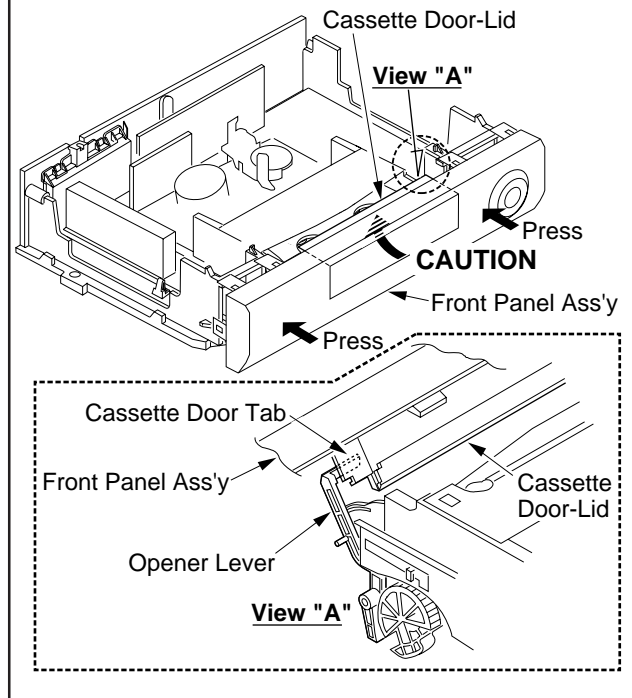


Fig. D4-2

#### 2. Installation of Shuttle Dial

- 1) Press the Shuttle Dial into place so that the center line is at top as shown.

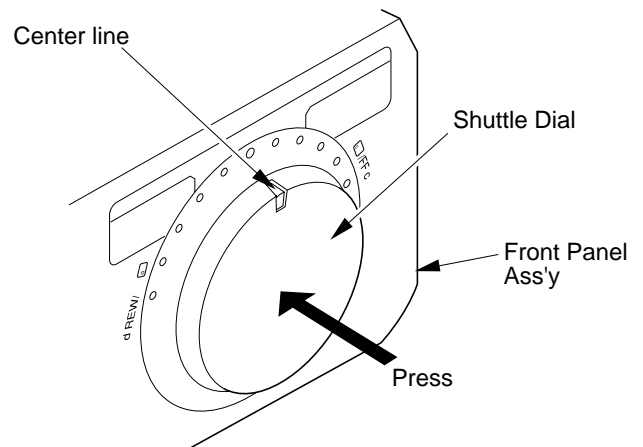


Fig. D4-3

## Operation C.B.A.

### Disassembly Procedure

1. Release 3 Locking Tabs (G).

**Note:**

Work carefully so as not to break the Tabs.

2. Disconnect 2 Connectors P6301 and P6302 on the Operation C.B.A.

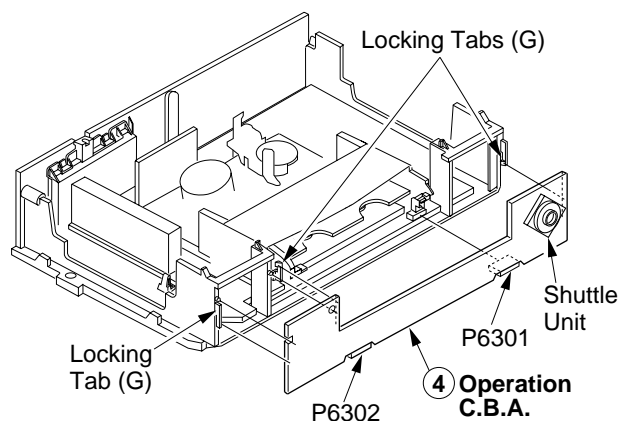


Fig. D5-1

**Note:**

When removing the Shuttle Unit from the Operation C.B.A., release 2 Locking Tabs (K) and disconnect Connector P6310 as shown below.

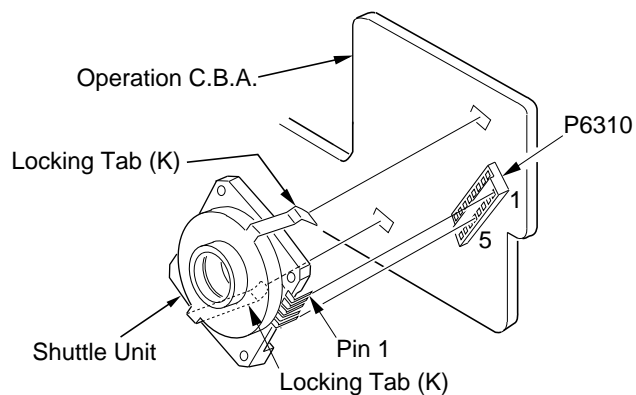


Fig. D5-2

### Reassembly Notes

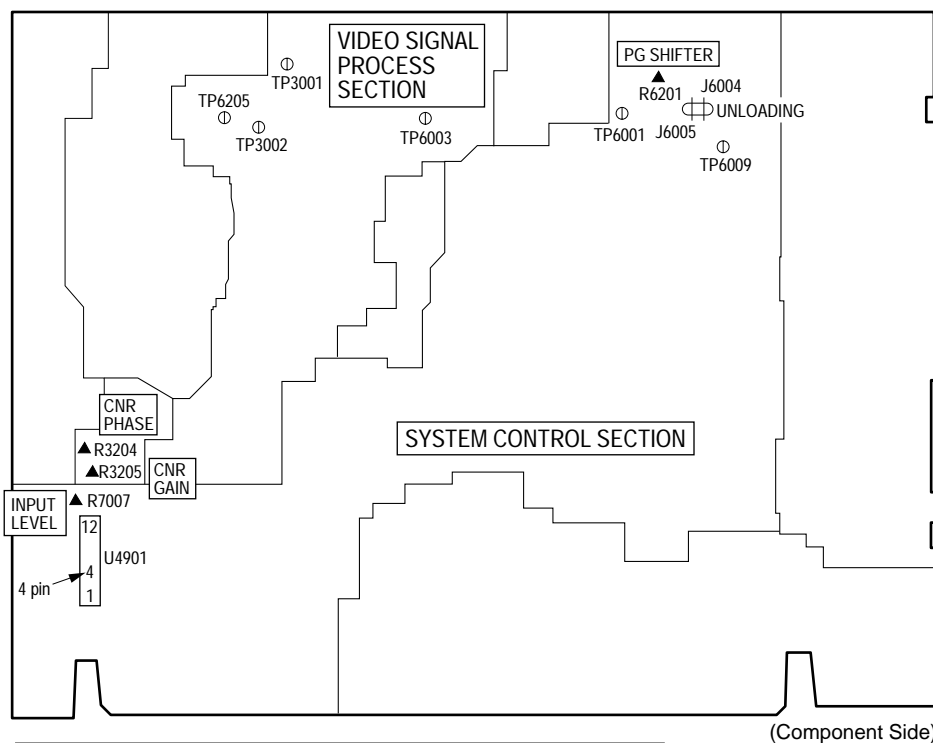
#### Installation of Shuttle Unit

- 1) Make sure the Locking Tabs (K) and pins are lined up, install the Shuttle Unit to the Operation C.B.A.

# ADJUSTMENT PROCEDURES

## TEST POINTS AND CONTROL LOCATION

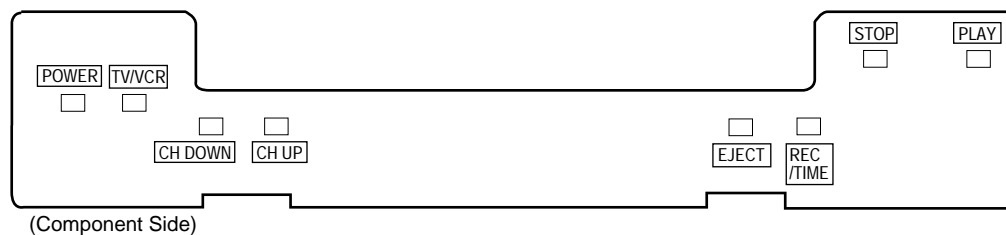
### Main C.B.A.



(Component Side)

Function of important Test Points on Main C.B.A.	
TP3001	Video Signal to Jack
TP3002	REC/PB Video envelope signal
TP6001	Service Test Point (inhibit sensors)
TP6003	defeat Auto tracking function(connect to +5V(TP6009))
TP6009	+5V
TP6205	Head SW.

### Operation C.B.A.



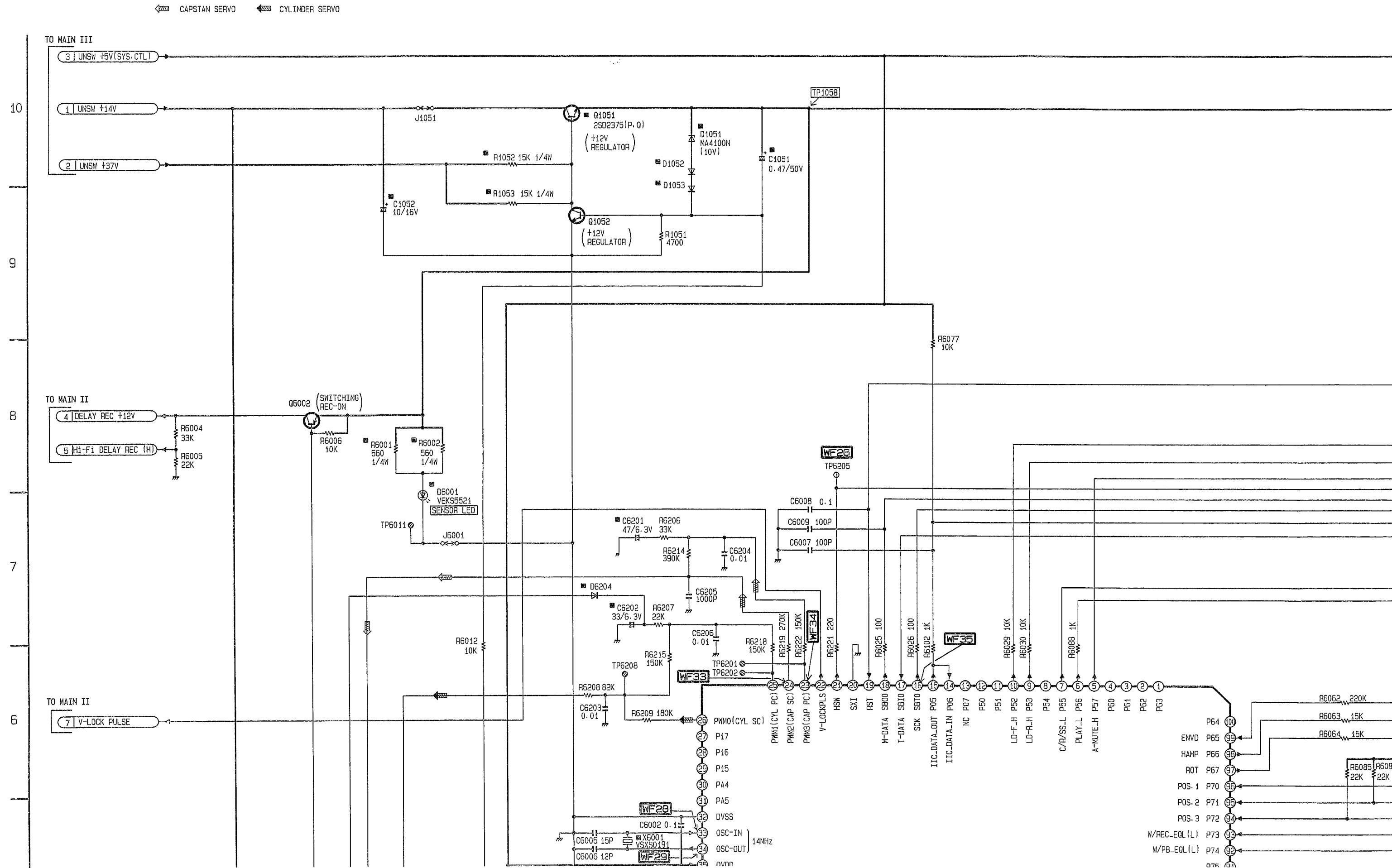
### Test Point Information

- ① Test Point with a jumper wire across a hole in the P.C.B.

– MEMO –

## SCHEMATIC DIAGRAMS

## MAIN I (POWER SUPPLY/SYSTEM CONTROL/SERVO) / JUNCTION SCHEMATIC DIAGRAM



NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES.  
REFER TO BEGINNING OF SCHEMATIC SECTION.

I/O CHART FOR IC6001(MN675048A5G)

PIN NO.	I/O	FUNCTION
1	---	(Not used)
2	---	(Not used)
3	---	(Not used)
4	---	(Not used)
5	O	AUDIO MUTE (H)
6	O	PB (L)
7	O	CUE/REV/SS (L)
8	---	(Not used)
9	O	LOADING MOTOR REVERSE (H)
10	O	LOADING MOTOR FORWARD (H)
11	---	(Not used)
12	---	(Not used)
13	---	(Not used)
14	I	PC SERIAL DATA
15	O	PC SERIAL DATA
16	O	SERIAL CLOCK
17	I	SERIAL DATA 0
18	O	SERIAL DATA 1
19	I	RESET
20	---	GND
21	O	HEAD SW
22	O	V-LOCK PULSE
23	O	CAP PHASE ERROR
24	O	CAP SPEED ERROR
25	O	CYL PHASE ERROR
26	O	CYL SPEED ERROR
27	---	(Not used)
28	---	(Not used)
29	---	(Not used)
30	---	(Not used)
31	---	(Not used)
32	---	GND
33	I	OSC 1
34	O	OSC 2
35	---	VDD
36	---	(Not used)
37	O	VIDEO DELAY REC (H)
38	---	(Not used)
39	O	H-FI HEAD SW
40	O	H-ROLL ACCELERATION
41	O	FORCED ACCELERATION
42	O	CAP REV(H)/STOP(M)/FWD(L)
43	O	CAP TORQUE LIMIT
44	---	(Not used)
45	---	(Not used)
46	I	PB H-FI AUDIO
47	---	(Not used)
48	O	+12V POWER ON (L)
49	O	PC SERIAL CLOCK
50	---	(Not used)

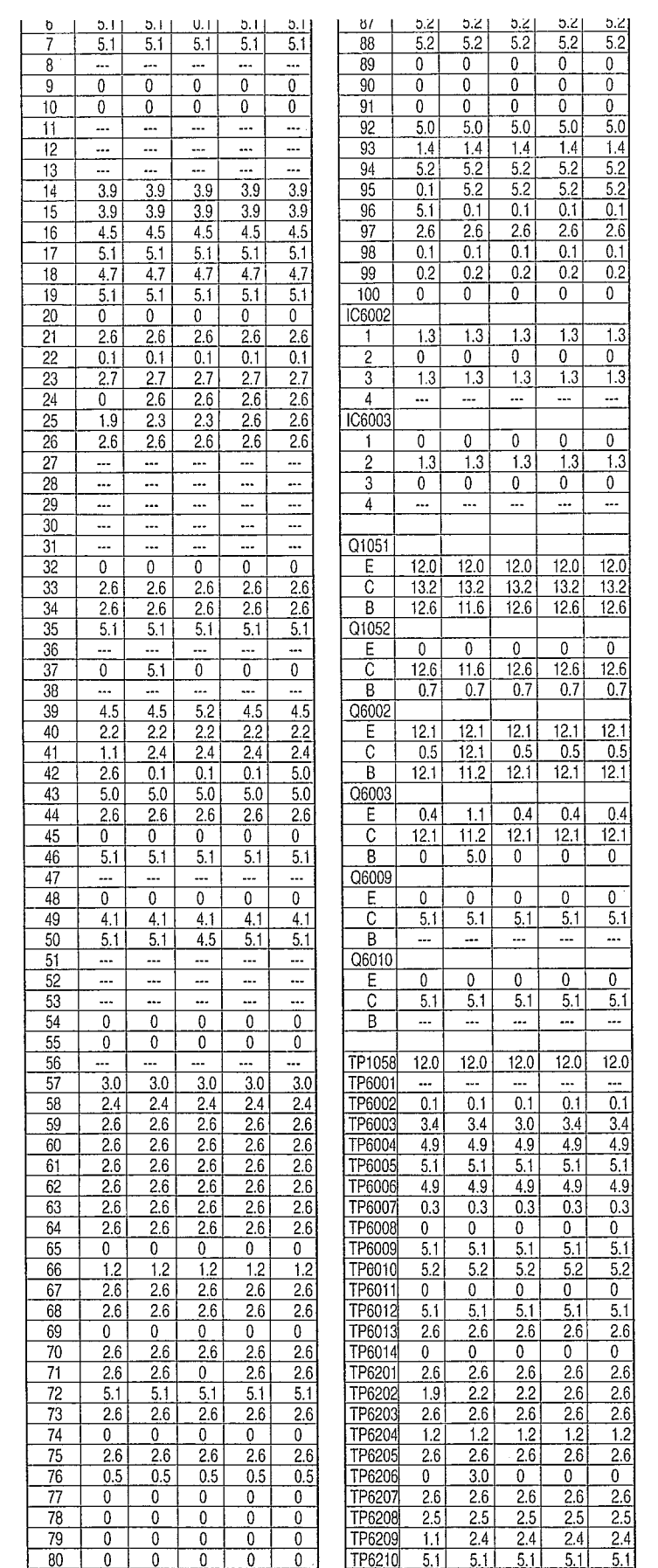
PIN NO.	I/O	FUNCTION
51	---	(Not used)
52	---	(Not used)
53	---	(Not used)
54	I	V-MASK (H)
55	I	IC6001 CS (L)
56	---	(Not used)
57	I	PG SHIFTER
58	O	AMP
59	O	AMP SW
60	---	AMP -
61	I	AMP +
62	I	CAP FG
63	O	CAP FG
64	I	CAP FG
65	---	GND
66	I	CYL PG/FG
67	O	V-REF 1
68	I	V-REF 2
69	---	TPZ
70	---	CONTROL PULSE (-)
71	I/O	CONTROL PULSE (+)
72	---	VDD
73	I	CTL AMP
74	---	GND
75	O	PB CTL PULSE
76	I	V-SYNC
77	I	SAFETY TAB BROKEN (H)
78	---	GND
79	---	GND
80	---	GND
81	I	SUPPLY PHOTO TR (L)
82	I	TAKEUP PHOTO TR (L)
83	I	SUPPLY REEL PULSE
84	I	TAKEUP REEL PULSE/SERVICE (L)
85	I	ENVELOPE VOLTAGE
86	---	GND
87	I	BLACK VIDEO DETECT
88	I	BLACK AUDIO DETECT
89	---	(Not used)
90	---	(Not used)
91	---	(Not used)
92	I	PB EQUALIZER (L)
93	I	REC EQUALIZER (L)
94	I	MODE SW POSITION C
95	I	MODE SW POSITION B
96	I	MODE SW POSITION A
97	O	ROTARY SW
98	O	HEAD AMP SW
99	I	ENVELOPE DET
100	---	(Not used)

MAIN I VOLTAGE CHART

MODE PIN NO.	STOP	REC	PLAY	FF	REW
IC6001					
1	---	---	---	---	---
2	---	---	---	---	---
3	---	---	---	---	---
4	---	---	---	---	---
5	0.2	0.2	0.2	0.2	0.2
6	5.1	5.1	0.1	5.1	5.1
7	5.1	5.1	5.1	5.1	5.1
8	---	---	---	---	---
9	0	0	0	0	0
10	0	0	0	0	0
11	---	---	---	---	---
12	---	---	---	---	---
13	---	---	---	---	---
14	3.9	3.9	3.9	3.9	3.9
15	3.9	3.9	3.9	3.9	3.9
16	4.5	4.5	4.5	4.5	4.5
17	5.1	5.1	5.1	5.1	5.1
18	4.7	4.7	4.7	4.7	4.7
19	5.1	5.1	5.1	5.1	5.1
20	0	0	0	0	0
21	2.6	2.6	2.6	2.6	2.6
22	0.1	0.1	0.1	0.1	0.1

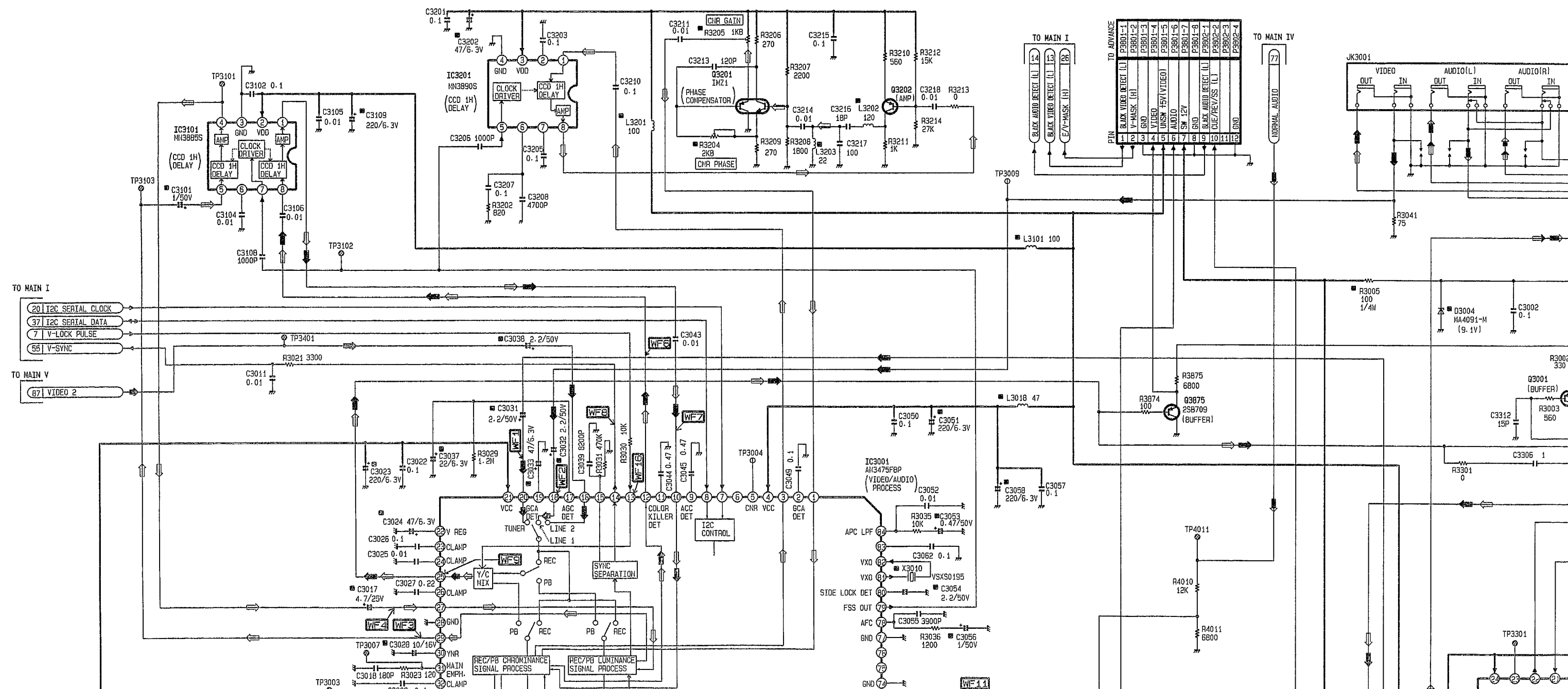
MODE PIN NO.	STOP	REC	PLAY	FF	REW
IC6002					
81	5.1	5.1	5.1	5.1	5.1
82	5.1	5.1	5.1	5.1	5.1
83	5.1	5.1	5.1	5.1	5.1
84	0.2	0.2	0.2	0.2	0.2
85	3.7	3.7	5.1	3.7	3.7
86	0	0	0	0	0
87	5.2	5.2	5.2	5.2	5.2
88	5.2	5.2	5.2	5.2	5.2
89	0	0	0	0	0
90	0	0	0	0	0
91	0	0	0	0	0
92	5.0	5.0	5.0	5.0	5.0
93	1.4	1.4	1.4	1.4	1.4
94	5.2	5.2	5.2	5.2	5.2
95	0.1	5.2	5.2	5.2	5.2
96	5.1	0.1	0.1	0.1	0.1
97	2.6	2.6	2.6	2.6	2.6
98	0.1	0.1	0.1	0.1	0.1
99	0.2	0.2	0.2	0.2	0.2
100	0	0	0	0	0
IC6002					
1	1.3	1.3	1.3	1.3	1.3
2	0	0	0	0	0



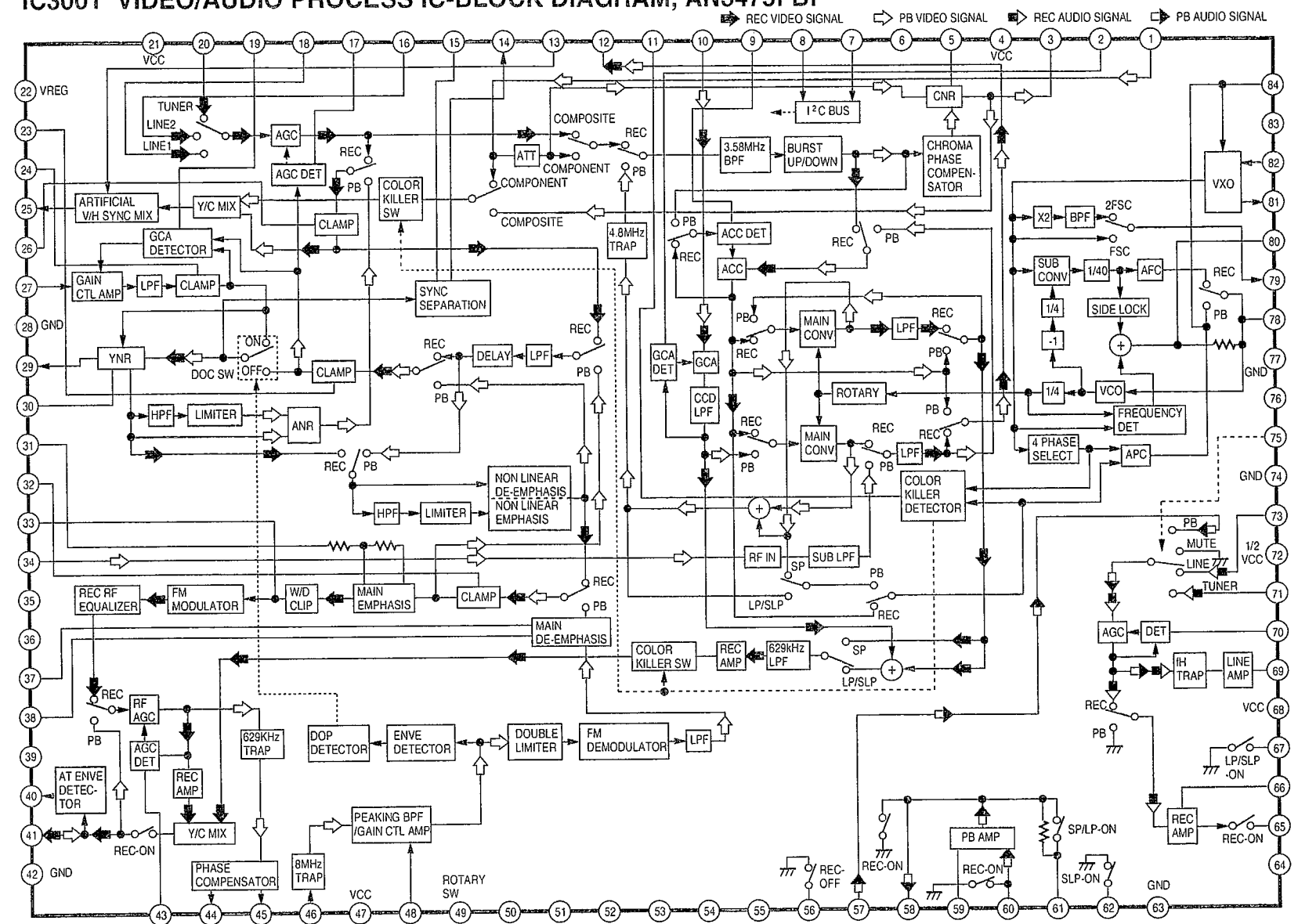


## 5

◀ REC VIDEO SIGNAL    ◀ PB VIDEO SIGNAL    ◀ REC AUDIO SIGNAL    ◀ PB AUDIO SIGNAL    ◀ CYLINDER SERVO

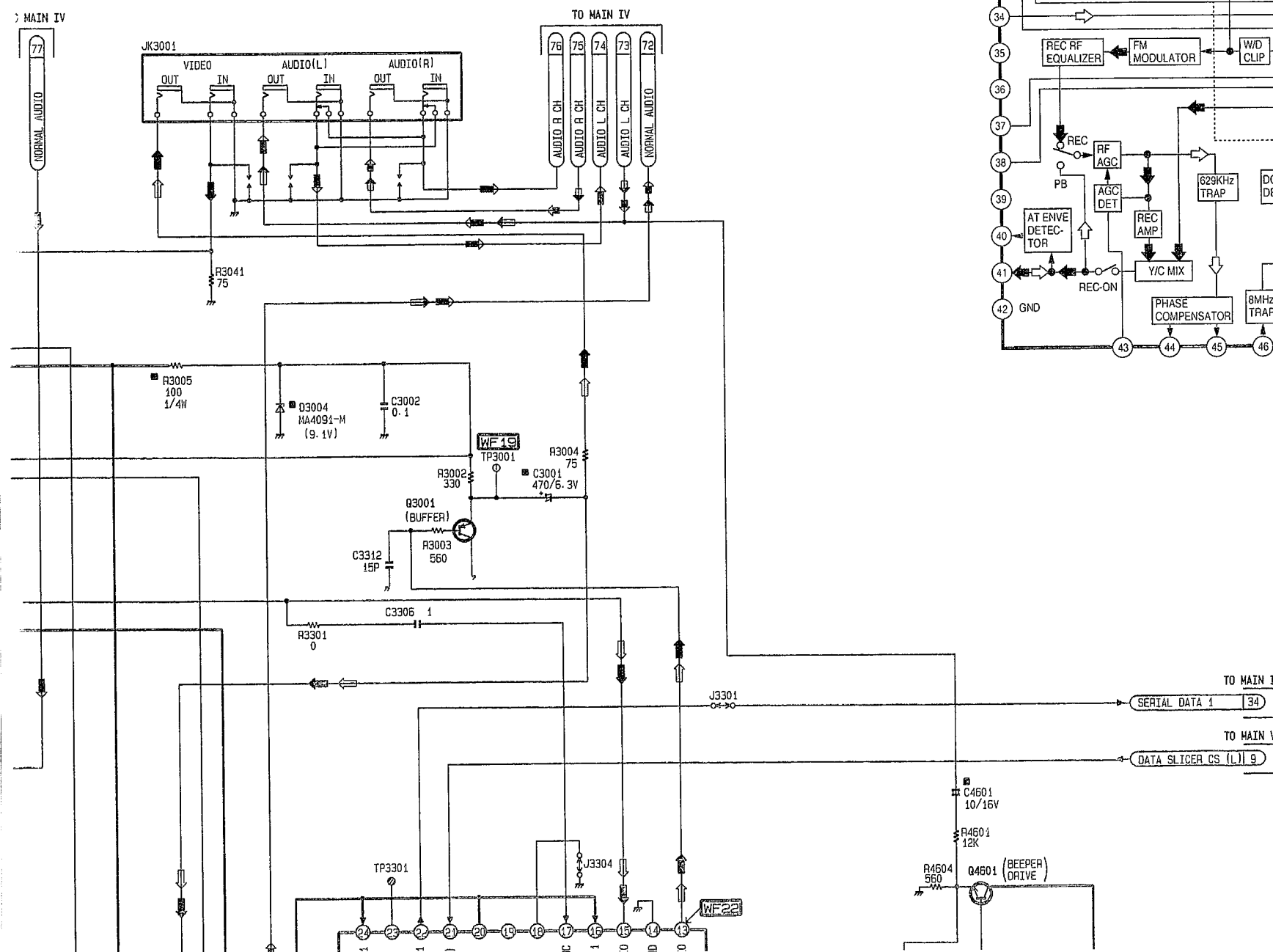
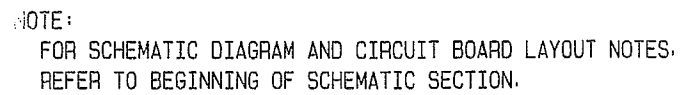


REC VIDEO SIGNAL    PB VIDEO SIGNAL    REC AUDIO SIGNAL    PB AUDIO SIGNAL



MODE PIN NO.	REC	PLAY	MODE PIN NO.	REC	PLAY	MODE PIN NO.	REC	PLAY
IC3001			64	---	---	Q3001		
1	5.1	5.1	65	2.6	2.6	E	2.8	2.8
2	3.3	3.3	66	2.6	2.6	C	0	0
3	2.1	2.1	67	2.6	2.6	B	2.0	2.0
4	5.1	5.1	68	5.1	5.1	Q3201		
5	4.3	4.3	69	2.7	2.7	E1	2.3	2.3
6	---	---	70	---	---	C1	0	0
7	4.2	4.2	71	2.6	2.6	B1	1.6	1.6
8	4.0	4.0	72	2.6	2.6	E2	1.6	1.6

MODE PIN NO.	REC	PLAY
Q3001		
E	2.8	2.8
C	0	0
B	2.0	2.0
Q3201		
E1	2.3	2.3
C1	0	0
B1	1.6	1.6
E2	1.6	1.6



6

5

4

3

2

1

TO MAIN I

5 HI-FI DELAY REC(H)

TO MAIN IV

85 REC AUDIO

61 PB AUDIO

62 HI-FI HEAD SW

TO MAIN III

63 UNSM +5V (VIDEO)

64 UNSM +14V

TO MAIN I

29 CYL PG/FG

28 CYL ERROR

43 PB (L)

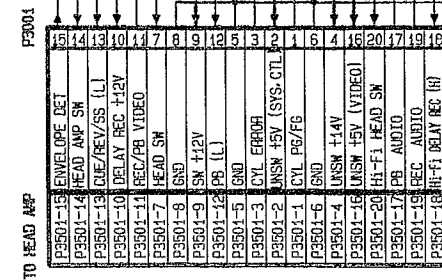
60 SW +12V

33 HEAD SW

42 CUE/REV/SS (L)

49 HEAD AMP SW

48 ENVELOPE DET



TO MAIN I

TO MAIN I

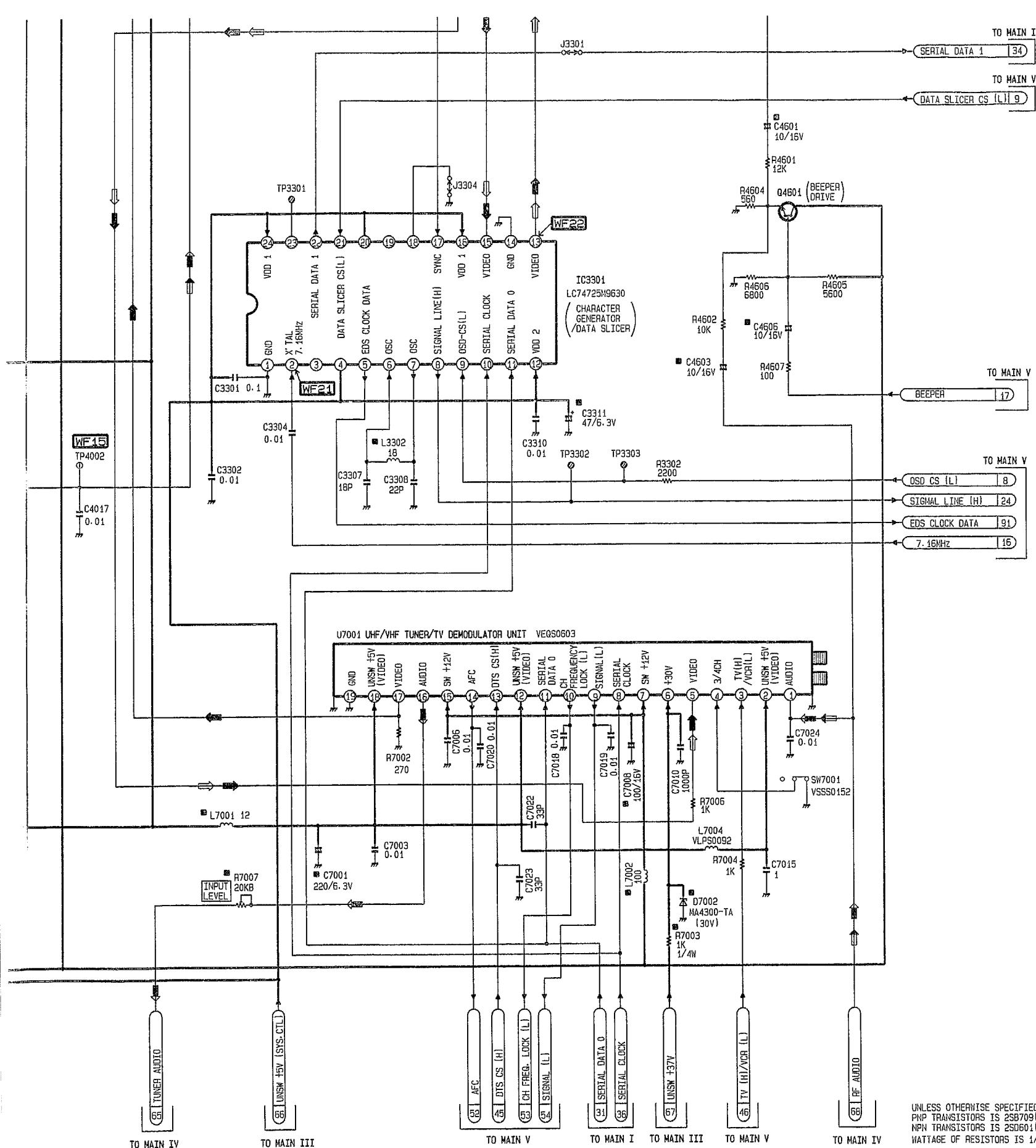
FULL ERASE UNIT

TO MAIN I

TO MAIN I

TO MAIN IV

TO MAIN III



VJBS6032

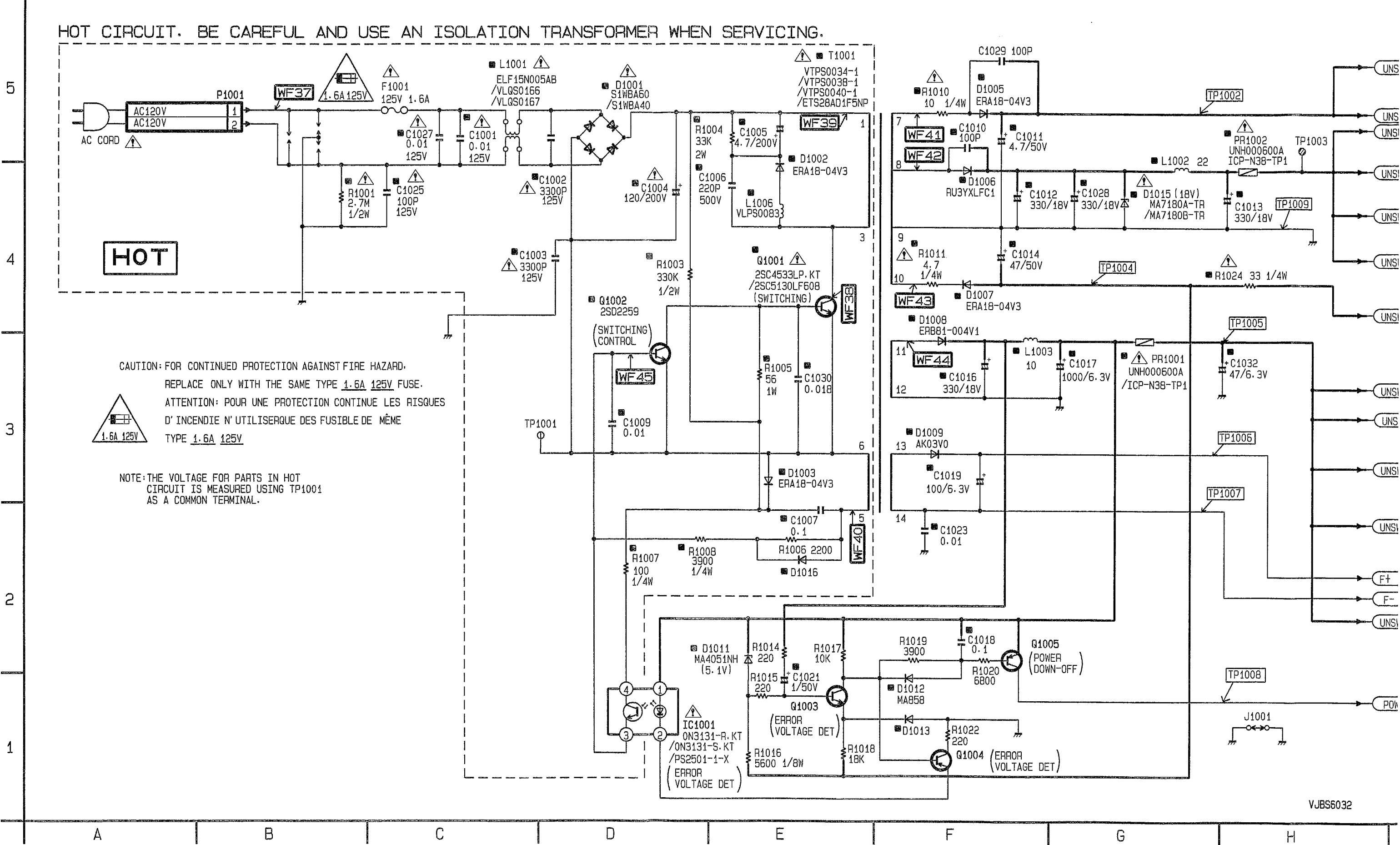
# MAIN II VOLTAGE CHART

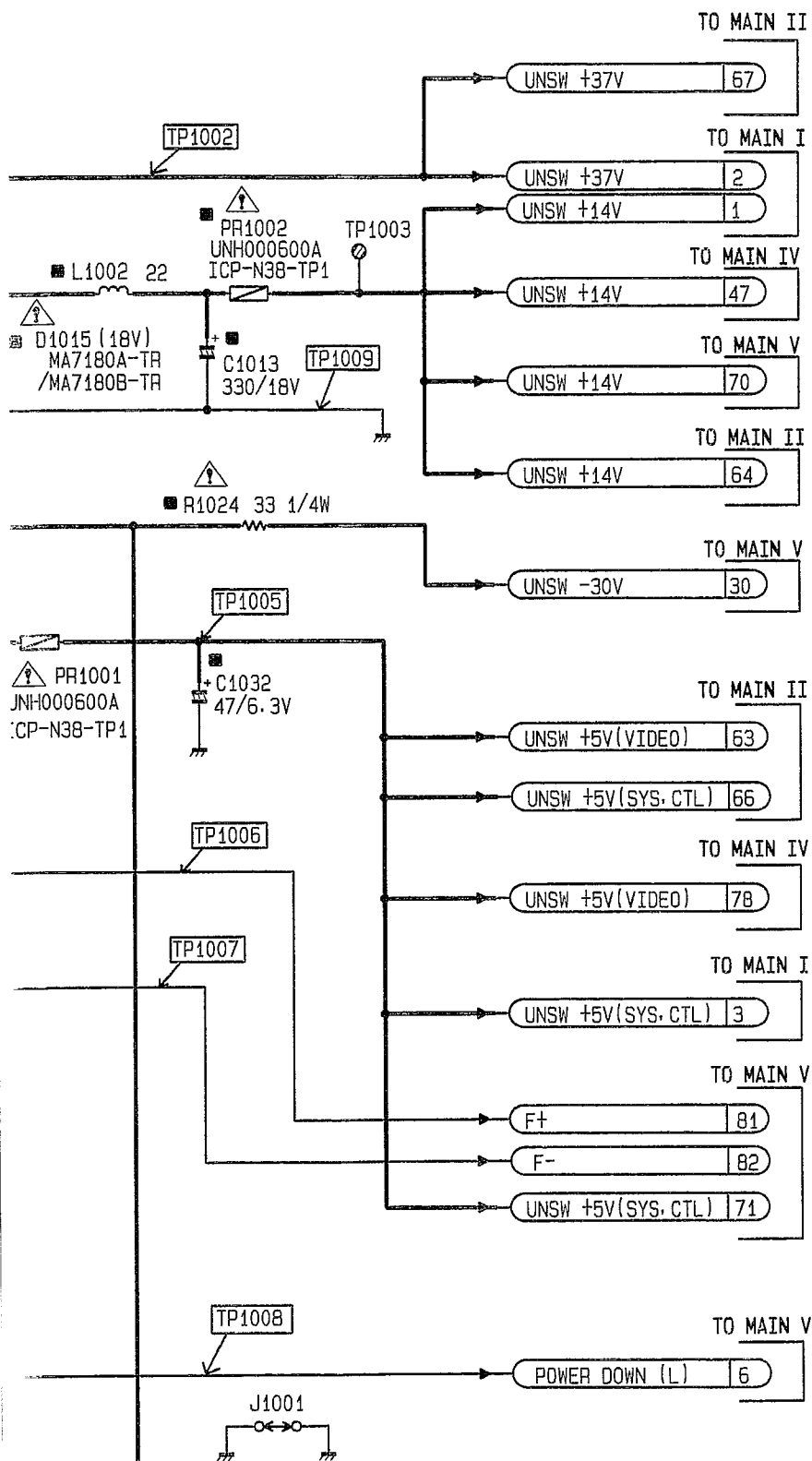
MODE PIN NO.	REC	PLAY
IC3001		
1	5.1	5.1
2	3.3	3.3
3	2.1	2.1
4	5.1	5.1
5	4.3	4.3
6	---	---
7	4.2	4.2
8	4.0	4.0
9	2.2	2.2
10	2.8	2.8
11	0.8	0.8
12	2.8	2.8
13	0.4	0.4
14	0.5	0.5
15	1.0	1.0
16	3.1	3.9
17	2.3	1.8
18	3.1	3.1
19	2.6	2.6
20	3.1	3.4
21	5.1	5.1
22	2.0	2.0
23	2.5	2.5
24	2.4	2.4
25	2.0	2.0
26	2.5	2.5
27	2.0	2.0
28	0	0
29	1.9	1.9
30	0	0
31	2.0	2.4
32	2.4	2.4
33	2.0	1.2
34	3.0	2.8
35	---	---
36	---	---
37	0	1.5
38	4.6	2.2
39	---	---
40	3.8	5.1
41	2.8	3.6
42	0	0
43	3.4	3.4
44	2.6	2.6
45	2.6	2.6
46	2.6	2.6
47	5.1	5.1
48	---	---
49	2.6	2.6
50	---	---
51	5.1	5.1
52	---	---
53	---	---
54	---	---
55	---	---
56	5.1	0
57	0.8	2.6
58	2.6	2.6
59	2.6	2.6
60	2.6	2.6
61	2.6	2.6
62	0	0
63	0	0

MODE PIN NO.	REC	PLAY
64	---	---
65	2.6	2.6
66	2.6	2.6
67	2.6	2.6
68	5.1	5.1
69	2.7	2.7
70	---	---
71	2.6	2.6
72	2.6	2.6
73	2.6	2.6
74	0	0
75	---	---
76	---	---
77	0	0
78	2.1	2.1
79	3.0	3.0
80	2.1	2.1
81	2.5	2.5
82	2.8	2.8
83	2.6	2.6
84	2.5	2.5
IC3101		
1	3.4	3.4
2	5.1	5.1
3	0	0
4	3.2	3.2
5	2.9	3.4
6	-2.7	-2.7
7	2.1	2.1
8	3.0	3.0
IC3201		
1	2.9	2.9
2	-2.6	-2.6
3	5.0	5.0
4	0	0
5	2.1	2.1
6	2.1	2.1
7	2.1	2.1
8	3.0	3.0
IC3301		
1	0	0
2	2.8	2.8
3	---	---
4	5.1	5.1
5	2.9	3.4
6	2.6	2.6
7	2.6	2.6
8	5.1	5.1
9	4.1	4.1
10	4.5	4.5
11	4.4	4.4
12	5.1	5.1
13	2.0	2.0
14	0	0
15	2.0	2.0
16	5.1	5.1
17	2.9	2.9
18	2.1	2.1
19	---	---
20	5.1	5.1
21	0	0
22	5.1	5.1
23	---	---
24	5.1	5.1


MODE PIN NO.	REC	PLAY
Q3001		
E	2.8	2.8
C	0	0
B	2.0	2.0
Q3201		
E1	2.3	2.3
C1	0	0
B1	1.6	1.6
E2	1.6	1.6
C2	3.5	3.5
B2	2.3	2.3
Q3202		
E	4.0	0
C	1.9	1.9
B	3.3	3.3
Q3875		
E	2.5	2.5
C	0	0
B	1.9	1.9
Q4001		
E	5.1	5.1
C	-18.7	5.1
B	5.1	4.4
Q4002		
E	-13.6	0
C	0	0
B	-19.1	0.8
Q4003		
E	-13.6	0
C	0	0
B	-18.6	0.8
Q4101		
E	0	0
C	11.3	0.5
B	0.2	0.5
Q4601		
E	5.8	5.8
C	12.0	12.0
B	6.4	6.4
TP3001	2.8	2.8
TP3002	2.7	2.3
TP3004	4.3	4.3
TP3005	2.6	2.6
TP3007	2.1	2.1
TP3008	3.4	3.4
TP3009	0	0
TP3010	5.1	5.1
TP3101	3.2	3.2
TP3103	1.8	1.8
TP3302	5.1	5.1
TP3303	4.1	4.1
TP3401	0	0
TP4002	0	0
TP4003	0	0
TP4011	0	0
TP4101	0	0
TP4102	0	0
TP4103	0	0

MAIN III (POWER SUPPLY) SCHEMATIC DIAGRAM





NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

IMPORTANT SAFETY NOTICE:  
COMPONENTS IDENTIFIED BY THE SIGN  HAVE  
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.  
WHEN REPLACING ANY OF THESE COMPONENTS,  
USE ONLY THE SPECIFIED PARTS.

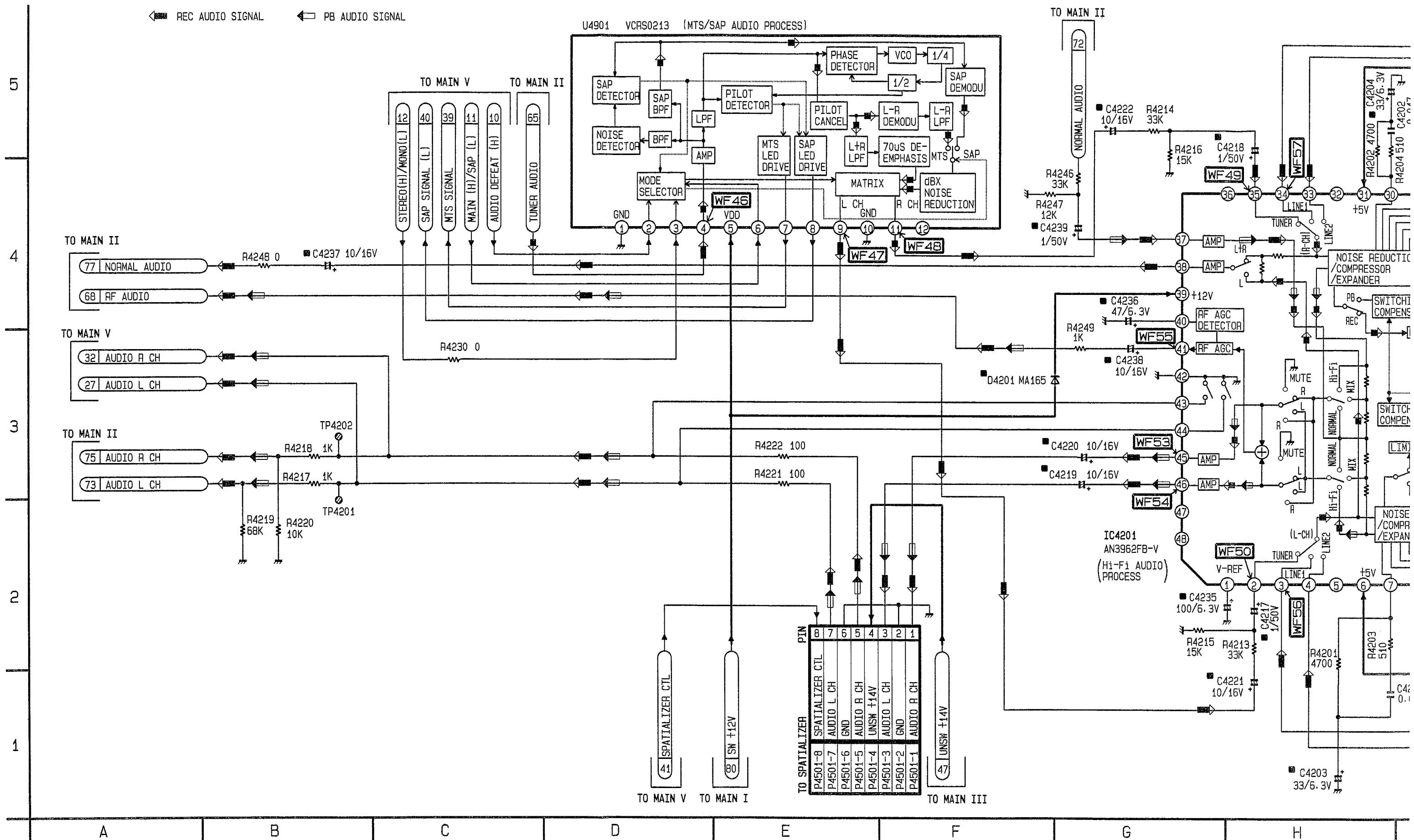
MAIN III VOLTAGE CHART

MODE PIN NO.	REC	PLAY
IC1001		
1	5.1	5.1
2	4.4	4.4
3	-54.0	-54.0
4	-53.8	-53.8
Q1001		
E	0	0
C	133.5	133.5
B	0.3	0.3
Q1002		
E	0	0
C	0.3	0.3
B	0.6	0.6
Q1003		
E	-0.6	-0.6
C	4.1	4.1
B	0	0
Q1004		
E	4.4	4.4
C	0.1	0.1
B	4.1	4.1
Q1005		
E	5.1	5.1
C	5.2	5.2
B	4.7	4.7
TP1001	0	0
TP1002	36.5	36.5
TP1003	13.5	13.5
TP1004	-30.0	-30.0
TP1005	0	0
TP1006	-18.9	-18.9
TP1007	-24.2	-24.2
TP1008	5.1	5.1
TP1009	0	0

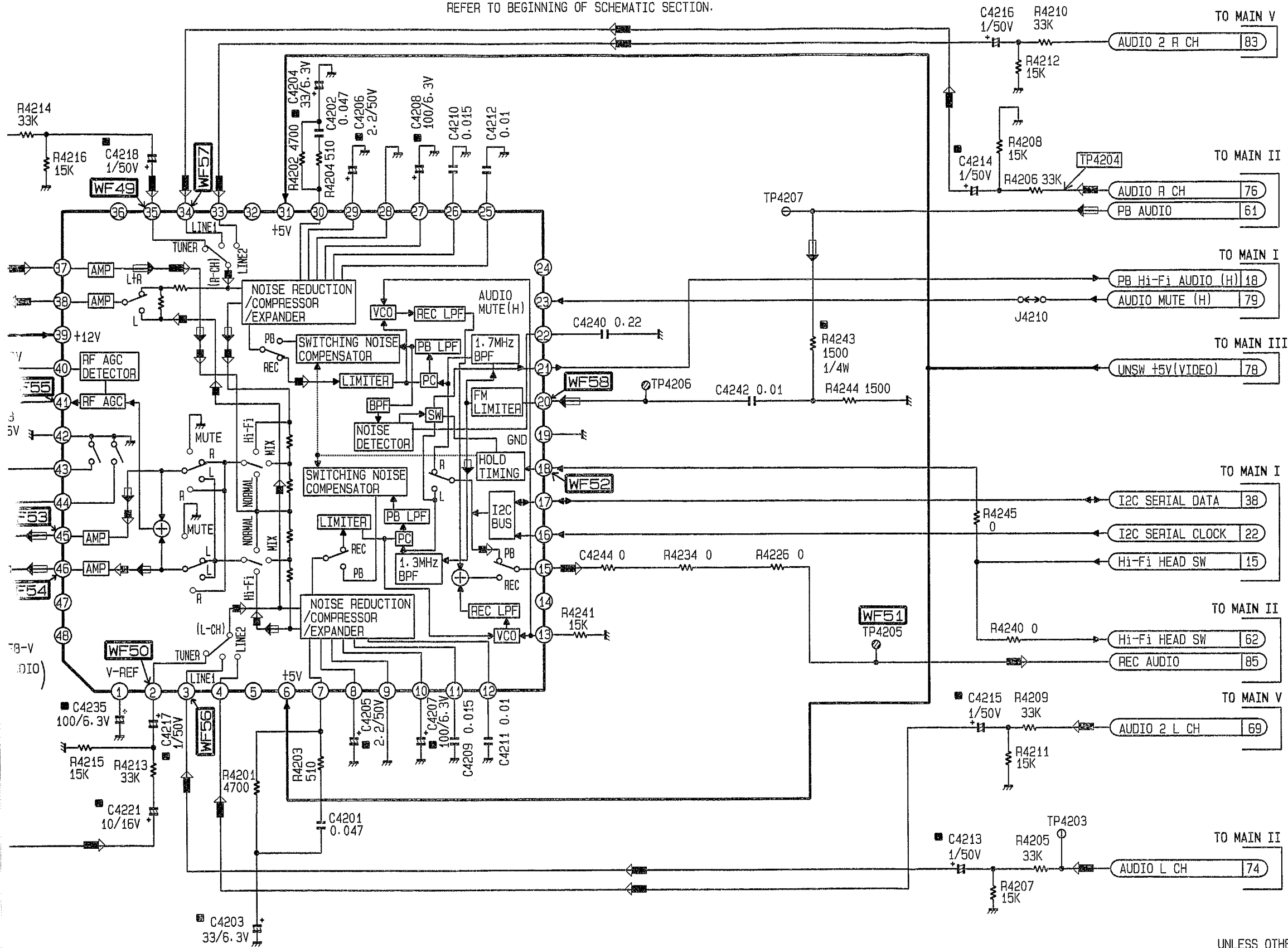
UNLESS OTHERWISE SPECIFIED:  
PNP TRANSISTORS IS 2SB709A(Q.R).  
NPN TRANSISTORS IS 2SD601A(R.S).  
DIODES IS MA165 AND  
WATTAGE OF RESISTORS IS 1/10W.

VJBS6032

## MAIN IV (HI-FI AUDIO) SCHEMATIC DIAGRAM



NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES:  
REFER TO BEGINNING OF SCHEMATIC SECTION.



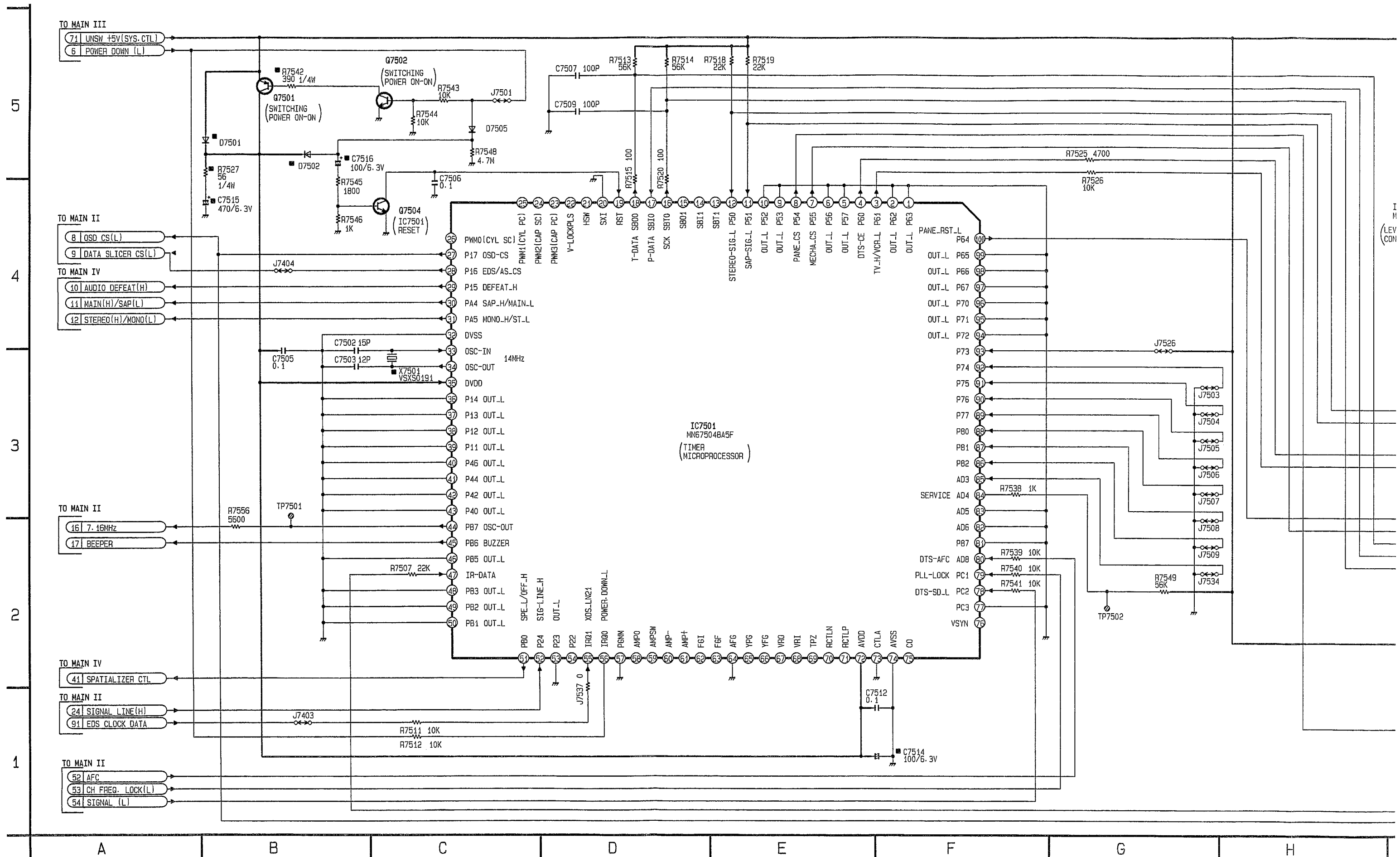
MAIN IV VOLTAGE CHART

MODE PIN NO.	REC	PLAY	MODE PIN NO.	REC	PLAY
IC4201			34	2.6	2.6
1	2.6	2.6	35	2.6	2.6
2	2.6	2.6	36	---	---
3	2.6	2.6	37	2.6	2.6
4	2.6	2.6	38	2.6	2.6
5	---	---	39	11.3	11.3
6	5.1	5.1	40	0.5	0.5
7	2.6	2.6	41	6.2	6.2
8	2.6	2.6	42	0	0
9	0	0	43	0	0
10	2.6	2.6	44	0	0
11	2.6	2.6	45	6.2	6.2
12	2.6	2.6	46	6.2	6.2
13	2.6	2.6	47	---	---
14	---	---	48	---	---
15	2.6	2.6	TP4201	0	0
16	4.2	4.2	TP4202	0	0
17	4.0	4.0	TP4203	0	0
18	0	0	TP4204	0	0
19	2.6	2.6	TP4205	2.7	2.7
20	2.6	2.6	TP4206	2.7	2.7
21	0	0	TP4207	0	0
22	0	0			
23	0	0			
24	---	---			
25	0	0			
26	2.6	2.6			
27	2.6	2.6			
28	0	0			
29	1.6	1.6			
30	2.7	2.7			
31	0.1	0.1			
32	---	---			
33	2.6	0			

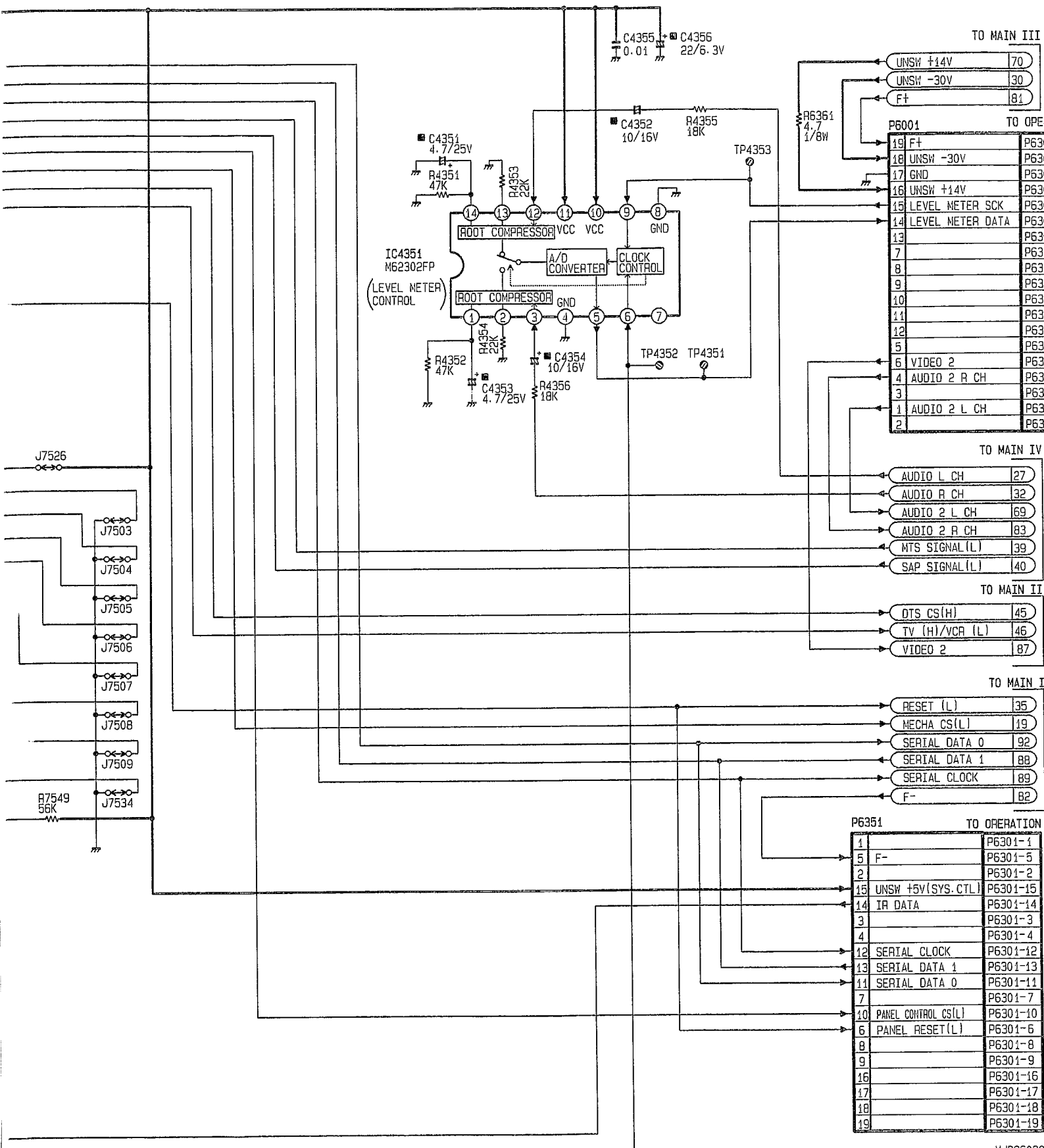
VJBS6032

UNLESS OTHERWISE SPECIFIED:  
WATTAGE OF RESISTORS IS 1/10W.

## MAIN V (TIMER) SCHEMATIC DIAGRAM



NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.



MAIN V VOLTAGE CHART

MODE PIN NO.	STOP	REC	PLAY	FF	REW
IC4351					
1	2.1	2.1	2.1	2.1	2.1
2	0.2	0.2	0.2	0.2	0.2
3	1.5	1.5	1.5	1.5	1.5
4	0	0	0	0	0
5	5.1	5.1	5.1	5.1	5.1
6	5.1	5.1	5.1	5.1	5.1
7	---	---	---	---	---
8	0	0	0	0	0
9	5.1	5.1	5.1	5.1	5.1
10	5.1	5.1	5.1	5.1	5.1
11	5.1	5.1	5.1	5.1	5.1
12	1.5	1.5	1.5	1.5	1.5
13	0.2	0.2	0.2	0.2	0.2
14	2.1	2.1	2.1	2.1	2.1
IC7501					
1	0	0	0	0	0
2	0	0	0	0	0
3	0	0	0	0	0
4	0.3	0.3	0.3	0.3	0.3
5	0	0	0	0	0
6	0	0	0	0	0
7	4.9	4.9	4.9	4.9	4.9
8	2.5	2.5	2.5	2.5	2.5
9	0	0	0	0	0
10	0	0	0	0	0
11	5.2	5.2	5.2	5.2	5.2
12	5.2	5.2	5.2	5.2	5.2
13	---	---	---	---	---
14	---	---	---	---	---
15	---	---	---	---	---
16	4.6	4.6	4.6	4.6	4.6
17	5.0	5.0	5.0	5.0	5.0
18	4.6	4.6	4.6	4.6	4.6
19	5.1	5.1	5.1	5.1	5.1
20	0	0	0	0	0
21	---	---	---	---	---
22	---	---	---	---	---
23	---	---	---	---	---
24	---	---	---	---	---
25	---	---	---	---	---
26	---	---	---	---	---
27	4.3	4.3	4.3	4.3	4.3
28	5.1	5.1	5.1	5.1	5.1
29	5.1	5.1	5.1	5.1	5.1
30	5.1	5.1	5.1	5.1	5.1
31	0	0	0	0	0
32	0	0	0	0	0
33	2.6	2.6	2.6	2.6	2.6
34	2.6	2.6	2.6	2.6	2.6
35	5.1	5.1	5.1	5.1	5.1
36	0	0	0	0	0
37	0	0	0	0	0
38	0	0	0	0	0
39	0	0	0	0	0
40	0	0	0	0	0
41	0	0	0	0	0
42	0	0	0	0	0
43	0	0	0	0	0
44	2.6	2.6	2.6	2.6	2.6
45	2.6	2.6	2.6	2.6	2.6
46	0	0	0	0	0
47	5.1	5.1	5.1	5.1	5.1
48	0	0	0	0	0
49	0	0	0	0	0
50	0	0	0	0	0
51	5.1	5.1	5.1	5.1	5.1
52	5.1	5.1	5.1	5.1	5.1

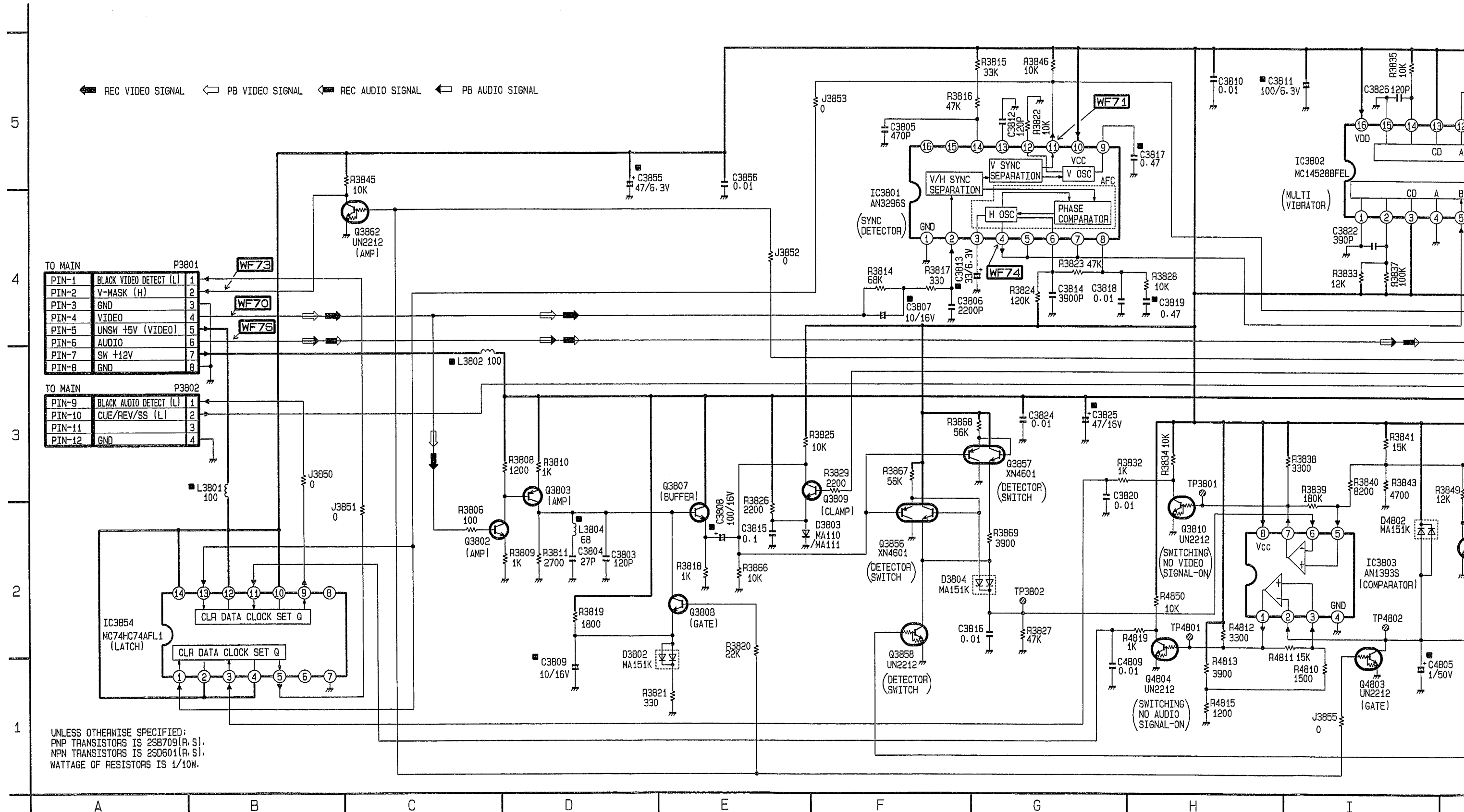
UNLESS OTHERWISE SPECIFIED:  
PNP TRANSISTORS IS 2SB709(R.S),  
NPN TRANSISTORS IS 2SD601(R.S),  
DIODES IS MA165 AND  
WATTAGE OF RESISTORS IS 1/10W.

VJBS6032

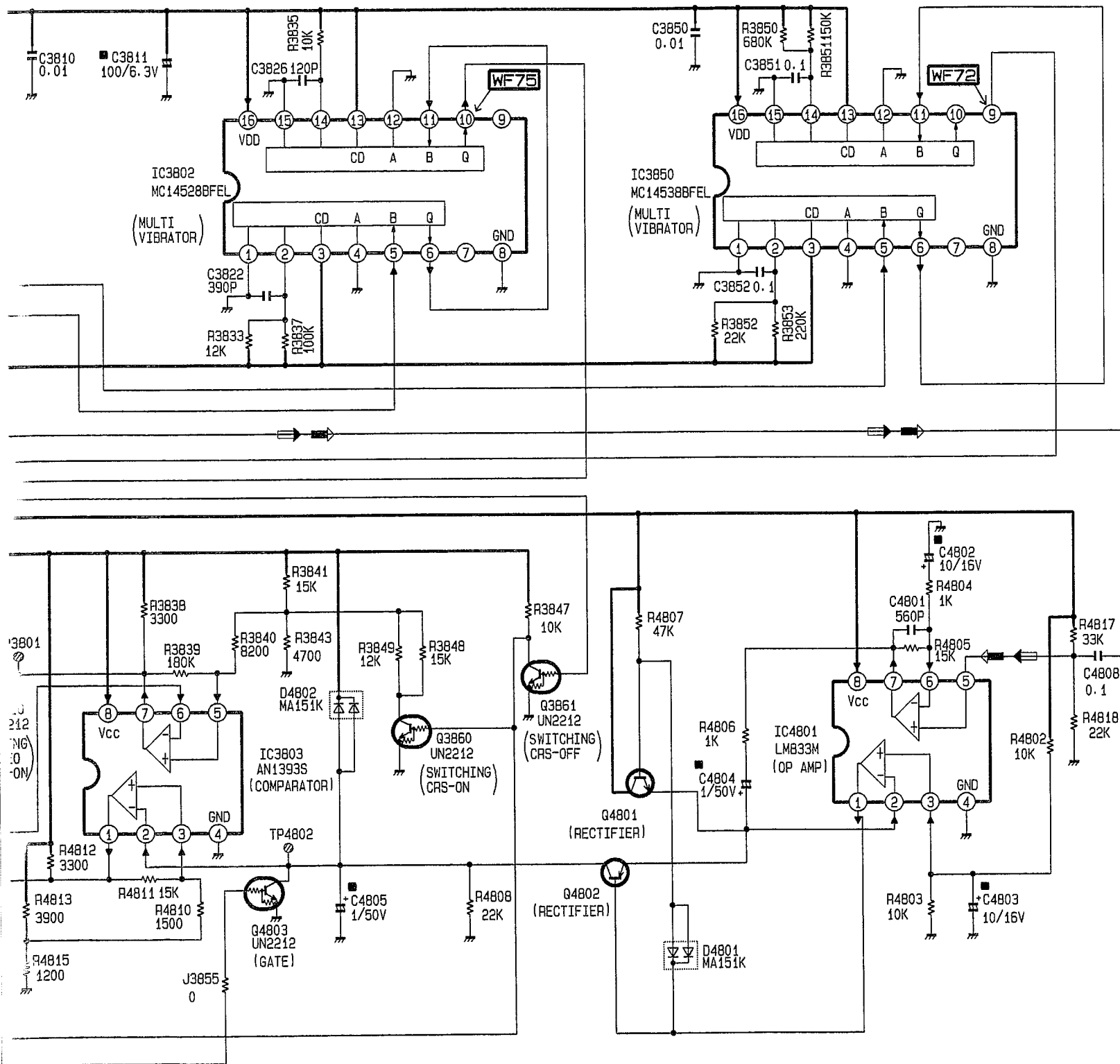
I/O CHART FOR IC7501(MN675048A5F)

PIN NO.	I/O	FUNCTION
1	---	GND
2	---	GND
3	O	TV (H)/VCR (L)
4	O	DTS-CS (H)
5	---	GND
6	---	GND
7	O	IC6001 CS (L)
8	O	PANEL CONTROL CS (L)
9	---	GND
10	---	GND
11	I	SAP SIGNAL (L)
12	I	MTS SIGNAL (L)
13	---	(Not used)
14	---	(Not used)
15	---	(Not used)
16	O	SERIAL CLOCK
17	I	SERIAL DATA 1
18	O	SERIAL DATA 0
19	I	RESET
20	---	GND
21	---	(Not used)
22	---	(Not used)
23	---	(Not used)
24	---	(Not used)
25	---	(Not used)
26	---	(Not used)
27	O	OSD CS (L)
28	I	DATA SLICER CS (L)
29	O	AUDIO DEFEAT (H)
30	O	MAIN (H)/SAP (L)
31	O	STEREO (H)/MONO (L)
32	---	GND
33	I	OSC 1
34	O	OSC 2
35	---	VDD
36	---	GND
37	---	GND
38	---	GND
39	---	GND
40	---	GND
41	---	GND
42	---	GND
43	---	GND
44	O	7.16MHz
45	O	BEEPER
46	---	GND
47	I	IR DATA
48	---	GND
49	---	GND
50	---	GND
51	O	SPATIALIZER CTL (H/L/OFF)
52	I	SIGNAL LINE (H)
53	---	GND
54	---	(Not used)
55	I	EDS CLOCK DATA
56	I	POWER DOWN (L)
57	---	GND
58	---	(Not used)
59	---	(Not used)
60	---	(Not used)
61	---	(Not used)
62	---	(Not used)
63	---	(Not used)
64	---	(Not used)
65	---	(Not used)
66	---	(Not used)
67	---	(Not used)
68	---	(Not used)
69	---	(Not used)
70	---	(Not used)
71	---	(Not used)
72	---	(Not used)
73	---	(Not used)
74	---	(Not used)
75	---	(Not used)
76	---	(Not used)
77	---	(Not used)
78	---	(Not used)
79	---	(Not used)
80	I	AFC
81	---	GND
82	---	GND
83	---	GND
84	I	TAKEUP REEL PULSE/SERVICE (L)
85	I	KEY DATA 8
86	I	KEY DATA 7
87	I	KEY DATA 6
88	I	KEY DATA 5
89	I	KEY DATA 4
90	I	KEY DATA 3
91	I	KEY DATA 2
92	I	KEY DATA 1
93	I	KEY DATA 0
94	---	GND
95	---	GND
96	---	GND
97	---	GND
98	---	GND
99	---	GND
100	O	PANEL RESET (L)

ADVANCE SCHEMATIC DIAGRAM



NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

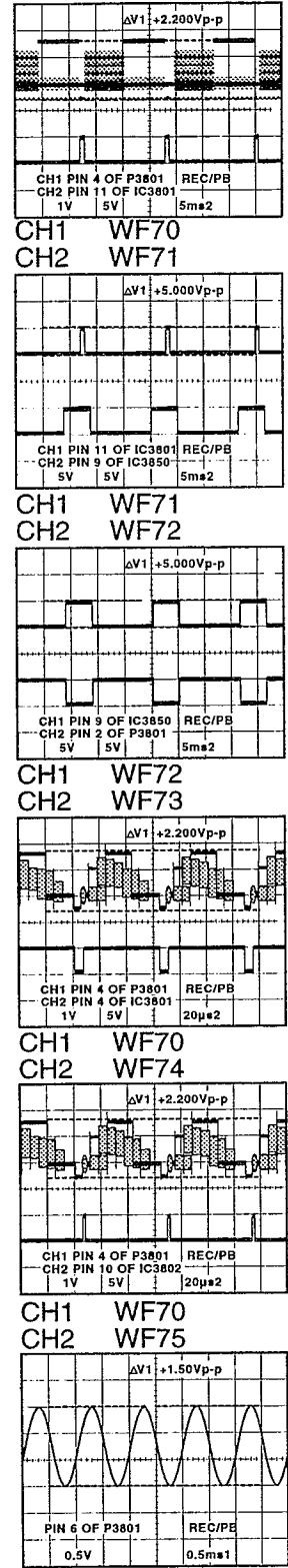


ADVANCE VOLTAGE CHART

MODE	REC	PLAY
IC3801		
1	0	0
2	3.8	3.8
3	4.2	4.2
4	4.2	4.2
5	4.2	4.2
6	3.0	3.0
7	4.2	4.2
8	3.2	3.2
9	2.5	2.5
10	5.2	5.2
11	4.9	4.9
12	0.8	0.8
13	0.1	0.1
14	2.0	2.0
15	---	---
16	---	---
IC3802		
1	0	0
2	4.7	4.7
3	5.2	5.2
4	0	0
5	4.1	4.1
6	0.5	0.5
7	---	---
8	0	0
9	---	---
10	0.2	0.2
11	0.5	0.5
12	0	0
13	5.2	5.2
14	4.9	4.9
15	0	0
16	5.2	5.2
IC3803		
1	4.1	1.5
2	0	3.3
3	0	1.3
4	0	0
5	1.4	1.3
6	0	2.7
7	0	1.4
8	5.2	5.2
IC3850		
1	0	0
2	4.6	4.6
3	5.2	5.2
4	0	0
5	4.9	4.9
6	0.7	0.7
7	---	---
8	0	0
9	1.6	1.6
10	3.6	3.6
11	0.7	0.7
12	0	0
13	5.2	5.2
14	2.6	2.6
15	0	0
16	5.2	5.2
IC3854		
1	5.2	4.9
2	5.2	5.2
3	2.1	3.7

MODE	REC	PLAY
Q3860		
E	0	0
B	0	0
C	0	1.3
Q3861		
E	0	0
B	5.1	5.1
C	0	0
Q3862		
E	0	0
B	1.6	0
C	3.6	3.6
Q4801		
E	6.0	6.0
B	6.2	6.2
C	12.0	12.0
Q4802		
E	0	4.4
B	5.8	5.8
C	6.0	6.0
Q4803		
E	0	0
B	0	0
C	0	3.3
Q4804		
E	0	0
B	4.1	1.5
C	0	3.3
TP3801	4.1	1.4
TP3802	0.7	2.7
TP4801	4.1	1.5
TP4802	0	3.3
Q3807		
E	3.3	3.3
B	3.9	3.9
C	12.0	12.0
Q3808		
E	2.6	2.6
B	1.1	1.1
C	0	0
Q3809		
E	0.7	0.7
B	0.1	0.1
C	0.7	1.6
Q3810		
E	0	0
B	2.9	1.3
C	2.1	3.7
Q3856		
E1	1.2	2.8
B1	1.2	0
C1	5.2	5.2
E2	1.2	1.8
B2	0.7	1.6
C2	0	0
Q3857		
E1	1.2	2.8
B1	1.2	0
C1	5.2	5.2
E2	1.2	1.8
B2	0.7	1.6
C2	0	0
Q3858		
E	0	0
B	0	0
C	1.9	1.9

SIGNAL WAVEFORM  
ADVANCE C.B.A.



OPERATION SCHEMATIC DIAGRAM

NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

5

4

3

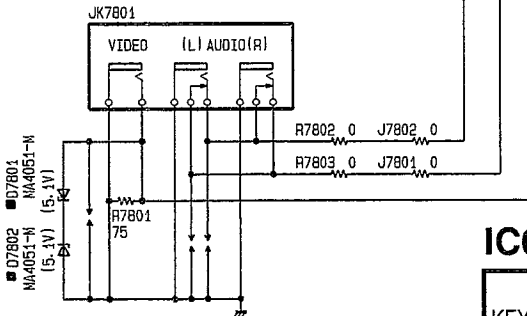
2

1

DP6301 VSZ30125 (DISPLAY TUBE)

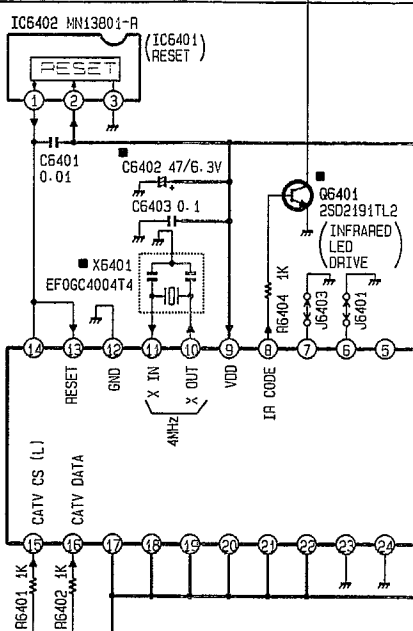
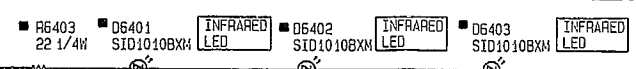
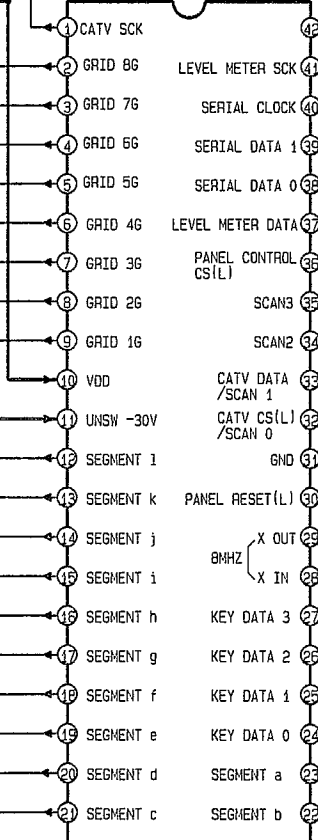
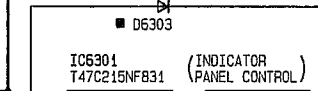
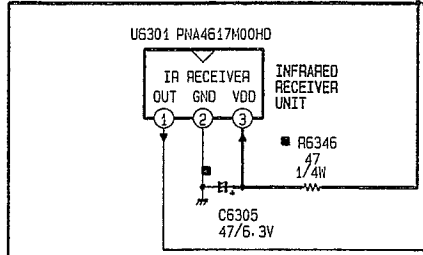
TO MAIN P6302

P6001-19	F+	19
P6001-18	UNSW -30V	18
P6001-17	GND	17
P6001-16	UNSW +14V	16
P6001-15	LEVEL METER SCK	15
P6001-14	LEVEL METER DATA	14
P6001-13		13
P6001-7		7
P6001-8		8
P6001-9		9
P6001-10		10
P6001-11		11
P6001-12		12
P6001-5		5
P6001-6	VIDEO 2	6
P6001-4	AUDIO 2 R CH	4
P6001-3		3
P6001-1	AUDIO 2 L CH	1
P6001-2		2

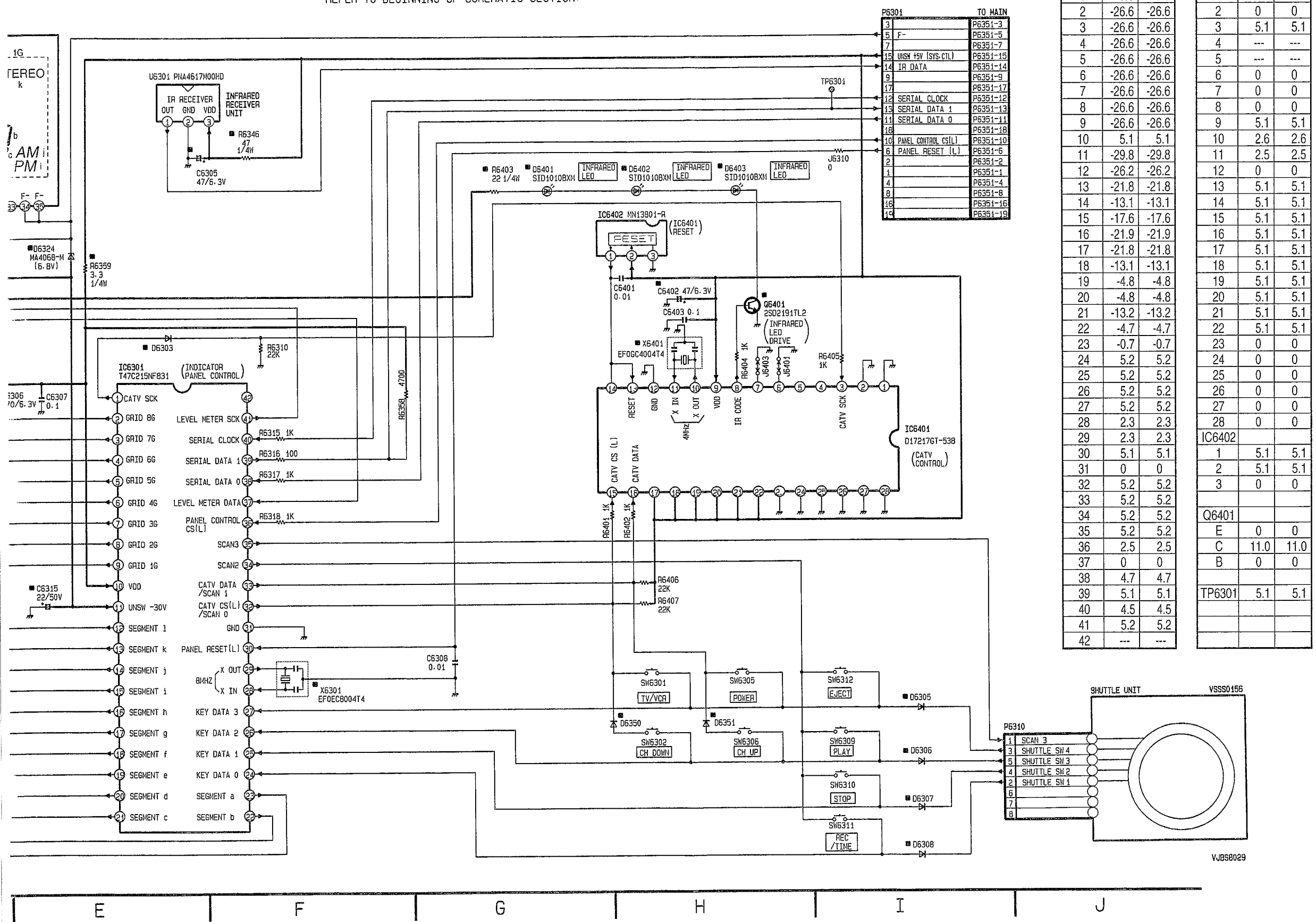


IC6301 KEY MATRIX

KEY DATA IN	SCAN		
	SCAN 0 (PIN 32)	SCAN 1 (PIN 33)	SCAN 2 (PIN 34)
KEY DATA 0 (PIN 24)	-----	-----	REC/TIME
KEY DATA 1 (PIN 25)	-----	-----	STOP
KEY DATA 2 (PIN 26)	CH DOWN	CH UP	PLAY
KEY DATA 3 (PIN 27)	TV/VCR	POWER	EJECT



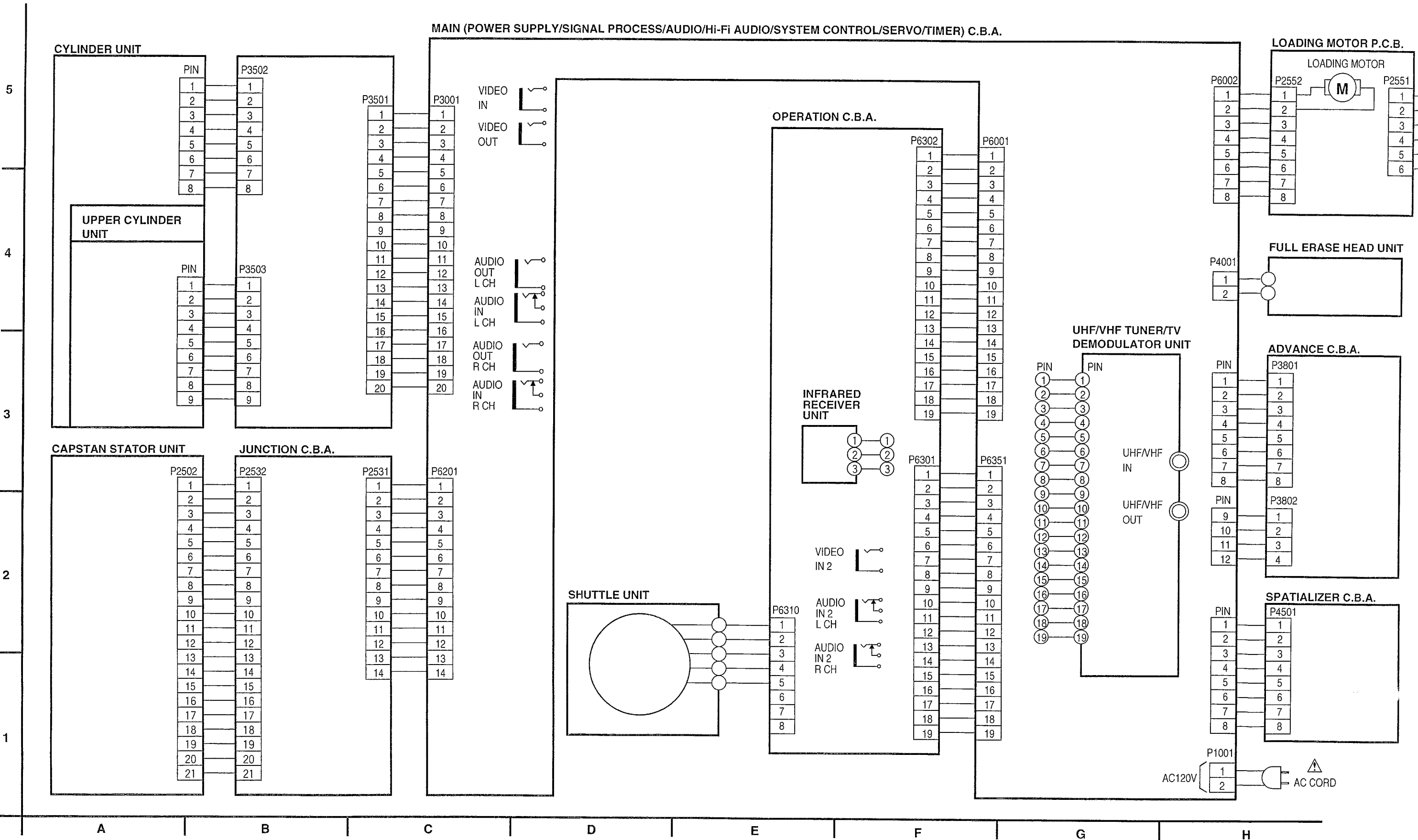
NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.




OPERATION VOLTAGE CHART

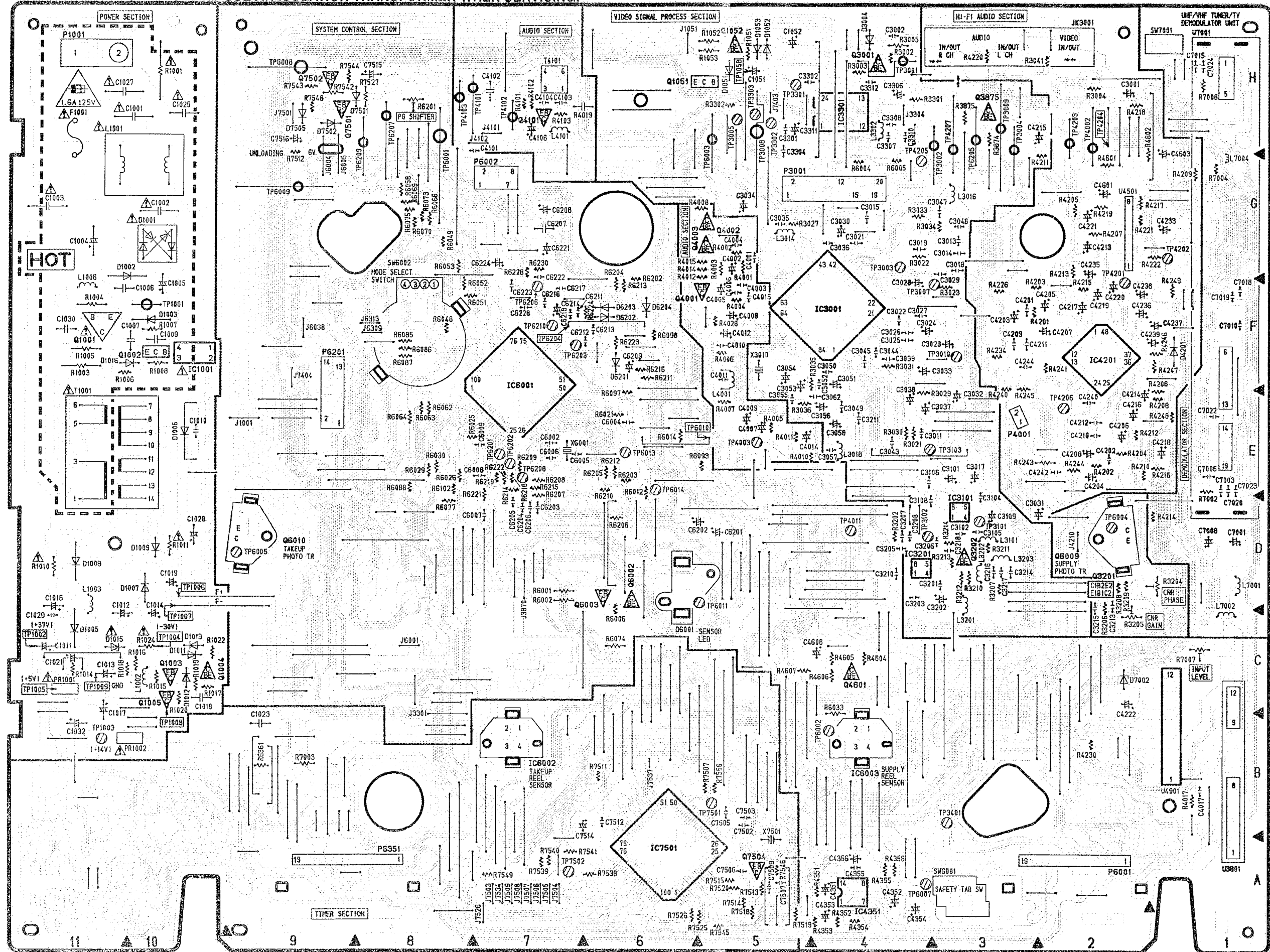
MODE PIN NO.	REC	PLAY	MODE PIN NO.	REC	PLAY
IC6301			IC6401		
1	5.0	5.0	1	0	0
2	-26.6	-26.6	2	0	0
3	-26.6	-26.6	3	5.1	5.1
4	-26.6	-26.6	4	---	---
5	-26.6	-26.6	5	---	---
6	-26.6	-26.6	6	0	0
7	-26.6	-26.6	7	0	0
8	-26.6	-26.6	8	0	0
9	-26.6	-26.6	9	5.1	5.1
10	5.1	5.1	10	2.6	2.6
11	-29.8	-29.8	11	2.5	2.5
12	-26.2	-26.2	12	0	0
13	-21.8	-21.8	13	5.1	5.1
14	-13.1	-13.1	14	5.1	5.1
15	-17.6	-17.6	15	5.1	5.1
16	-21.9	-21.9	16	5.1	5.1
17	-21.8	-21.8	17	5.1	5.1
18	-13.1	-13.1	18	5.1	5.1
19	-4.8	-4.8	19	5.1	5.1
20	-4.8	-4.8	20	5.1	5.1
21	-13.2	-13.2	21	5.1	5.1
22	-4.7	-4.7	22	5.1	5.1
23	-0.7	-0.7	23	0	0
24	5.2	5.2	24	0	0
25	5.2	5.2	25	0	0
26	5.2	5.2	26	0	0
27	5.2	5.2	27	0	0
28	2.3	2.3	28	0	0
29	2.3	2.3	IC6402		
30	5.1	5.1	1	5.1	5.1
31	0	0	2	5.1	5.1
32	5.2	5.2	3	0	0
33	5.2	5.2			
34	5.2	5.2	Q6401		
35	5.2	5.2	E	0	0
36	2.5	2.5	C	11.0	11.0
37	0	0	B	0	0
38	4.7	4.7			
39	5.1	5.1	TP6301	5.1	5.1
40	4.5	4.5			
41	5.2	5.2			
42	---	---			

INTERCONNECTION SCHEMATIC DIAGRAM




IMPORTANT SAFETY NOTICE:  
COMPONENTS IDENTIFIED BY THE SIGN  HAVE  
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.  
WHEN REPLACING ANY OF THESE COMPONENTS,  
USE ONLY THE SPECIFIED PARTS.

**CIRCUIT BOARD LAYOUT**  
**MAIN (POWER SUPPLY/SIGNAL PROCESS/AUDIO/HI-FI AUDIO/SYSTEM CONTROL/SERVO/TIMER) C.B A VEPS6032HA**  
**HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.**



NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

IMPORTANT SAFETY NOTICE:  
COMPONENTS IDENTIFIED BY THE SIGN  HAVE  
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.  
WHEN REPLACING ANY OF THESE COMPONENTS,  
USE ONLY THE SPECIFIED PARTS.

MAIN	
TRANSISTOR	
Q1001	F-11
Q1002	F-11
Q1003	C-10
Q1004	C-10
Q1005	C-10
Q1051	H-6
Q1052	H-5
Q3001	H-4
Q3002	F-3
Q3010	G-5
Q3201	D-2
Q3202	D-3
Q3870	G-5
Q3875	H-3
Q4001	F-6
Q4002	G-5
Q4003	G-6
Q4101	H-7
Q4601	C-4
Q6002	D-6
Q6003	D-7
Q6009	D-2
Q6010	D-9
Q7501	H-9
Q7502	H-9
Q7504	A-5

MAIN	
IC	
IC1001	F-10
IC3001	F-4
IC3101	D-3
IC3201	D-4
IC3301	H-4
IC4201	F-2
IC4351	A-4
IC6001	F-7
IC6002	B-7
IC6003	B-4
IC7501	A-6

MAIN	
CONNECTOR	
P1001	H-11
P3001	G-5
P4001	E-3
P6001	A-2
P6002	G-7
P6201	E-9
P6351	A-8

MAIN	
ADJUSTMENT	
R3204	D-1
R3205	C-2
R6201	H-8
R7007	C-1

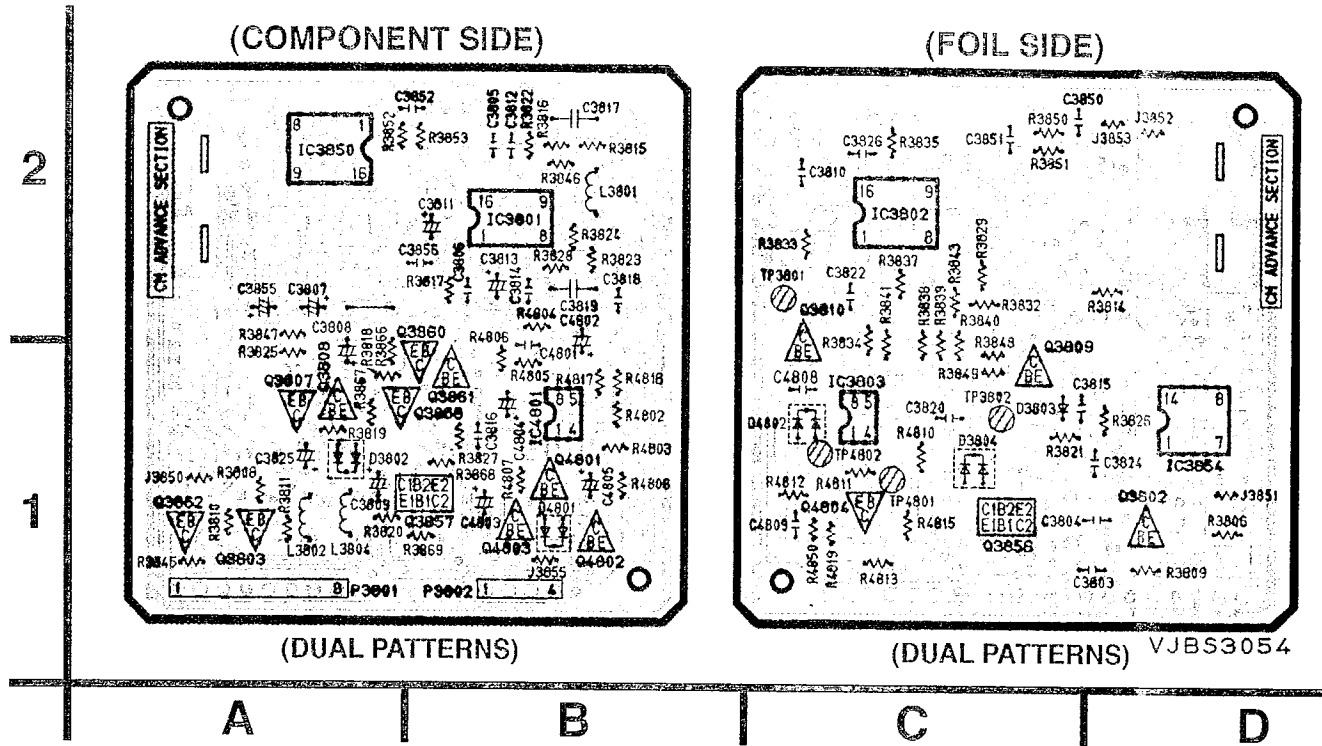
MAIN	
TEST POINT	
TP1001	F-10
TP1002	C-11
TP1003	B-11
TP1004	C-10
TP1005	C-11
TP1006	D-10
TP1007	C-10
TP1008	B-10
TP1009	C-11
TP1058	H-5
TP3001	H-4
TP3002	G-3
TP3003	G-4
TP3004	H-3
TP3005	H-5
TP3006	G-5
TP3007	F-4
TP3008	G-5
TP3009	H-3
TP3010	F-4
TP3101	D-3
TP3102	D-4
TP3103	E-3
TP3301	H-5
TP3302	G-5
TP3303	H-5
TP3401	B-3
TP4002	H-2
TP4003	E-5
TP4011	D-4
TP4101	H-7
TP4102	H-7
TP4103	H-8
TP4201	G-2
TP4202	G-1

MAIN	
TEST POINT	
TP4203	H-2
TP4204	H-2
TP4205	H-4
TP4206	E-2
TP4207	H-3
TP4351	A-3
TP4352	B-10
TP4353	A-3
TP6001	G-8
TP6002	B-4
TP6003	G-5
TP6004	D-2
TP6005	D-9
TP6007	A-4
TP6008	H-9
TP6009	G-9
TP6010	E-6
TP6011	D-5
TP6013	E-6
TP6014	E-6
TP6201	E-7
TP6202	E-7
TP6203	F-7
TP6204	F-7
TP6205	G-3
TP6206	F-7
TP6207	H-8
TP6208	E-7
TP6209	G-8
TP6210	F-7
TP7401	A-10
TP7402	A-11
TP7403	A-11
TP7501	B-5
TP7502	A-7

LEADLESS COMPONENT PARTS LOCATION GUIDE

MAIN C.B.A.											
Q1003	C-10	R4002	G-5	R4601	G-2	R6221	D-8	C3052	E-4	C6008	E-8
Q1052	H-5	R4003	F-5	R4602	H-2	R6222	E-7	C3055	E-5	C6009	E-7
Q3001	H-4	R4004	F-5	R4604	C-4	R6223	F-6	C3057	E-4	C6203	D-7
Q3201	D-2	R4005	E-5	R4605	C-4	R6224	F-6	C3062	F-5	C6204	D-7
Q3202	D-3	R4006	F-5	R4606	C-4	R6228	F-7	C3102	D-3	C6205	D-7
Q3875	H-3	R4007	E-5	R4607	C-5	R6230	G-7	C3104	D-3	C6206	D-7
Q4001	F-6	R4008	G-6	R6004	G-4	R6361	B-9	C3105	D-3	C6211	F-6
Q4002	G-5	R4010	E-5	R6005	G-4	R7002	D-1	C3106	E-4	C6212	F-6
Q4003	G-6	R4011	E-5	R6006	C-6	R7004	G-1	C3108	D-4	C6213	F-6
Q4101	H-7	R4012	F-6	R6012	D-6	R7006	H-1	C3201	D-4	C6214	F-7
Q4601	C-4	R4014	G-6	R6014	E-6	R7507	B-5	C3203	D-4	C6216	F-7
Q6002	C-8	R4015	G-6	R6021	E-6	R7511	B-6	C3205	D-4	C6217	F-7
Q6003	D-7	R4017	B-1	R6025	E-8	R7512	G-9	C3206	D-4	C6222	F-7
Q7501	H-9	R4028	F-5	R6026	E-8	R7513	A-5	C3207	D-4	C6223	F-7
Q7502	H-9	R4101	H-7	R6029	E-8	R7514	A-5	C3208	D-4	C6228	F-7
Q7504	A-5	R4102	H-7	R6030	E-8	R7515	A-5	C3210	D-4	C7003	E-1
R1006	F-11	R4103	H-7	R6048	F-8	R7518	A-5	C3211	E-4	C7006	E-1
R1014	C-11	R4201	F-3	R6049	G-8	R7519	A-5	C3213	C-2	C7010	F-1
R1015	C-10	R4202	E-2	R6051	F-8	R7520	A-5	C3214	D-3	C7015	H-1
R1016	C-10	R4203	F-3	R6052	F-8	R7525	A-6	C3215	C-2	C7018	F-1
R1017	C-10	R4204	E-2	R6053	G-8	R7526	A-6	C3216	D-3	C7019	F-1
R1018	C-11	R4205	G-2	R6058	G-8	R7538	A-6	C3217	D-3	C7020	D-1
R1019	C-10	R4206	F-1	R6062	E-8	R7539	A-7	C3218	D-3	C7022	E-1
R1020	B-10	R4207	G-2	R6063	E-8	R7540	A-7	C3301	H-5	C7023	E-1
R1022	C-10	R4208	E-1	R6064	E-8	R7541	A-7	C3302	H-5	C7024	H-1
R1051	H-5	R4209	G-1	R6066	G-8	R7543	H-9	C3304	H-5	C7502	B-5
R3002	H-4	R4210	E-2	R6069	G-8	R7544	H-9	C3306	H-4	C7503	B-5
R3003	H-4	R4211	G-3	R6070	G-8	R7545	A-5	C3307	H-4	C7505	B-5
R3004	H-2	R4212	E-2	R6073	G-8	R7546	A-5	C3308	H-4	C7506	A-5
R3021	E-4	R4213	G-2	R6075	G-8	R7548	H-9	C3310	H-4	C7507	A-5
R3022	G-4	R4214	D-1	R6077	D-8	R7549	A-7	C3312	H-4	C7509	A-5
R3023	F-3	R4215	F-2	R6085	F-8	R7556	B-5	C4001	G-5	C7512	B-6
R3027	G-5	R4216	E-1	R6086	F-8	C1010	E-10	C4003	F-5	L7004	G-1
R3029	E-3	R4217	G-2	R6087	F-8	C1029	C-11	C4004	G-5		
R3030	E-4	R4218	H-2	R6088	E-8	C3002	H-4	C4006	F-5		
R3031	F-4	R4219	G-2	R6093	E-6	C3011	E-4	C4010	F-5		
R3033	G-4	R4220	H-3	R6097	E-6	C3014	G-3	C4011	F-5		
R3034	G-3	R4221	G-2	R6098	F-6	C3015	G-4	C4015	F-5		
R3035	F-4	R4222	G-2	R6102	E-8	C3018	G-3	C4017	B-1		
R3036	E-5	R4226	F-3	R6202	F-6	C3019	G-4	C4101	G-8		
R3041	H-3	R4230	B-2	R6203	E-6	C3021	G-4	C4103	H-7		
R3202	D-4	R4234	F-3	R6204	G-6	C3022	F-4	C4104	H-7		
R3206	C-2	R4240	E-3	R6205	E-6	C3025	F-4	C4201	F-3		
R3207	D-3	R4241	F-2	R6206	D-6	C3026	F-4	C4202	E-2		
R3208	C-2	R4244	E-2	R6207	D-7	C3027	F-4	C4209	F-3		
R3209	D-2	R4245	E-3	R6208	E-7	C3029	F-3	C4210	E-2		
R3210	D-3	R4246	F-1	R6209	E-7	C3035	G-5	C4211	F-3		
R3211	D-3	R4247	F-1	R6210	D-6	C3036	G-4	C4212	E-2		
R3212	D-3	R4248	E-1	R6211	F-6	C3039	F-4	C4240	E-2		
R3213	D-3	R4249	F-1	R6212	E-6	C3043	E-4	C4242	E-3		
R3214	D-3	R4351	A-4	R6213	F-6	C3044	F-4	C4244	F-3		
R3301	H-4	R4352	A-4	R6214	D-7	C3045	F-4	C6002	E-7		
R3302	H-5	R4353	A-4	R6215	E-7	C3047	G-3	C6004	E-6		
R3874	G-3	R4354	A-4	R6216	F-6	C3048	G-3	C6005	E-7		
R3875	H-3	R4355	A-4	R6218	D-7	C3049	E-4	C6006	E-7		
R4001	F-5	R4356	A-4	R6219	E-7	C3050	F-4	C6007	D-8		

ADVANCE C.B.A VEPS3054A



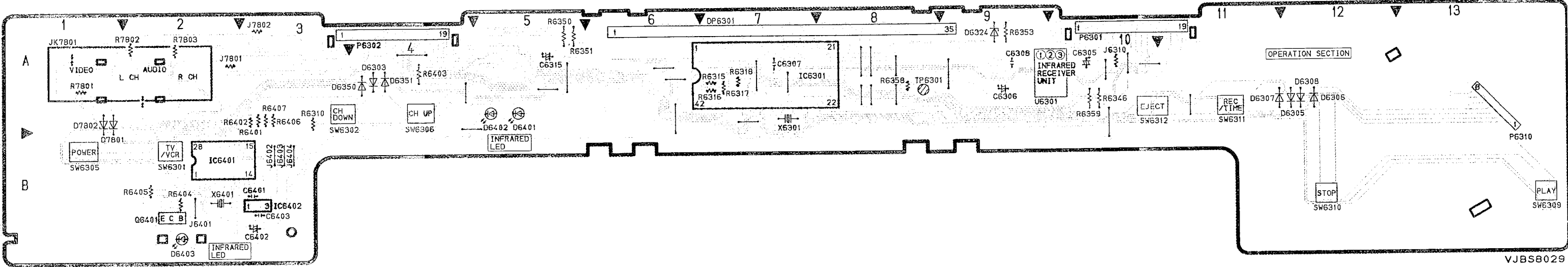
ADVANCE	
TRANSISTOR	
Q3802	D-1
Q3803	A-1
Q3807	A-1
Q3808	A-1
Q3809	C-1
Q3810	C-2
Q3856	C-1
Q3857	A-1
Q3858	B-1
Q3860	A-2
Q3861	B-1
Q3862	A-1
Q4801	B-1
Q4802	B-1
Q4803	B-1
Q4804	C-1

ADVANCE	
IC	
IC3801	B-2
IC3802	C-2
IC3803	C-1
IC3850	A-2
IC3854	D-1
IC4801	B-1
CONNECTOR	
P3801	A-1
P3802	B-1
TEST POINT	
TP3801	C-2
TP3802	C-1
TP4801	C-1
TP4802	C-1

LEADLESS COMPONENT PARTS LOCATION GUIDE  
ADVANCE C.B.A.

Q3802	D-1	R3814	D-2	R3845	A-1	R4818	B-1
Q3803	A-1	R3815	B-2	R3846	B-2	R4819	C-1
Q3807	A-1	R3816	B-2	R3847	A-2	R4850	C-1
Q3808	A-1	R3817	B-2	R3848	C-2	C3803	C-1
Q3809	C-1	R3818	A-1	R3849	C-1	C3804	C-2
Q3810	C-2	R3819	A-1	R3850	C-1	C3805	B-1
Q3856	C-1	R3820	A-1	R3851	C-1	C3806	B-2
Q3857	A-1	R3821	C-1	R3852	A-2	C3810	C-2
Q3858	B-1	R3822	B-2	R3853	B-2	C3812	B-2
Q3860	A-2	R3823	B-2	R3866	A-1	C3814	B-2
Q3861	B-1	R3824	B-2	R3867	A-1	C3815	C-1
Q3862	A-1	R3825	A-1	R3868	B-1	C3816	B-1
Q4801	B-1	R3826	D-1	R3869	B-1	C3818	B-2
Q4802	B-1	R3827	B-1	R4802	B-1	C3820	C-1
Q4803	B-1	R3828	B-2	R4803	B-1	C3822	C-2
Q4804	C-1	R3829	C-2	R4804	B-2	C3824	D-1
D3802	A-1	R3832	C-2	R4805	B-1	C3826	C-2
D3803	C-1	R3833	C-2	R4806	B-2	C3850	C-2
D3804	C-1	R3834	C-2	R4807	B-1	C3851	C-2
D4801	B-1	R3835	C-2	R4808	B-1	C3852	A-2
D4802	C-1	R3837	C-2	R4810	C-1	C3856	A-2
R3806	D-1	R3838	C-2	R4811	C-1	C4801	B-1
R3808	A-1	R3839	C-2	R4812	C-1	C4808	C-1
R3809	D-1	R3840	C-2	R4813	C-1	C4809	C-1
R3810	A-1	R3841	C-2	R4815	C-1		
R3811	A-1	R3843	C-2	R4817	B-1		

NOTE:  
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,  
REFER TO BEGINNING OF SCHEMATIC SECTION.

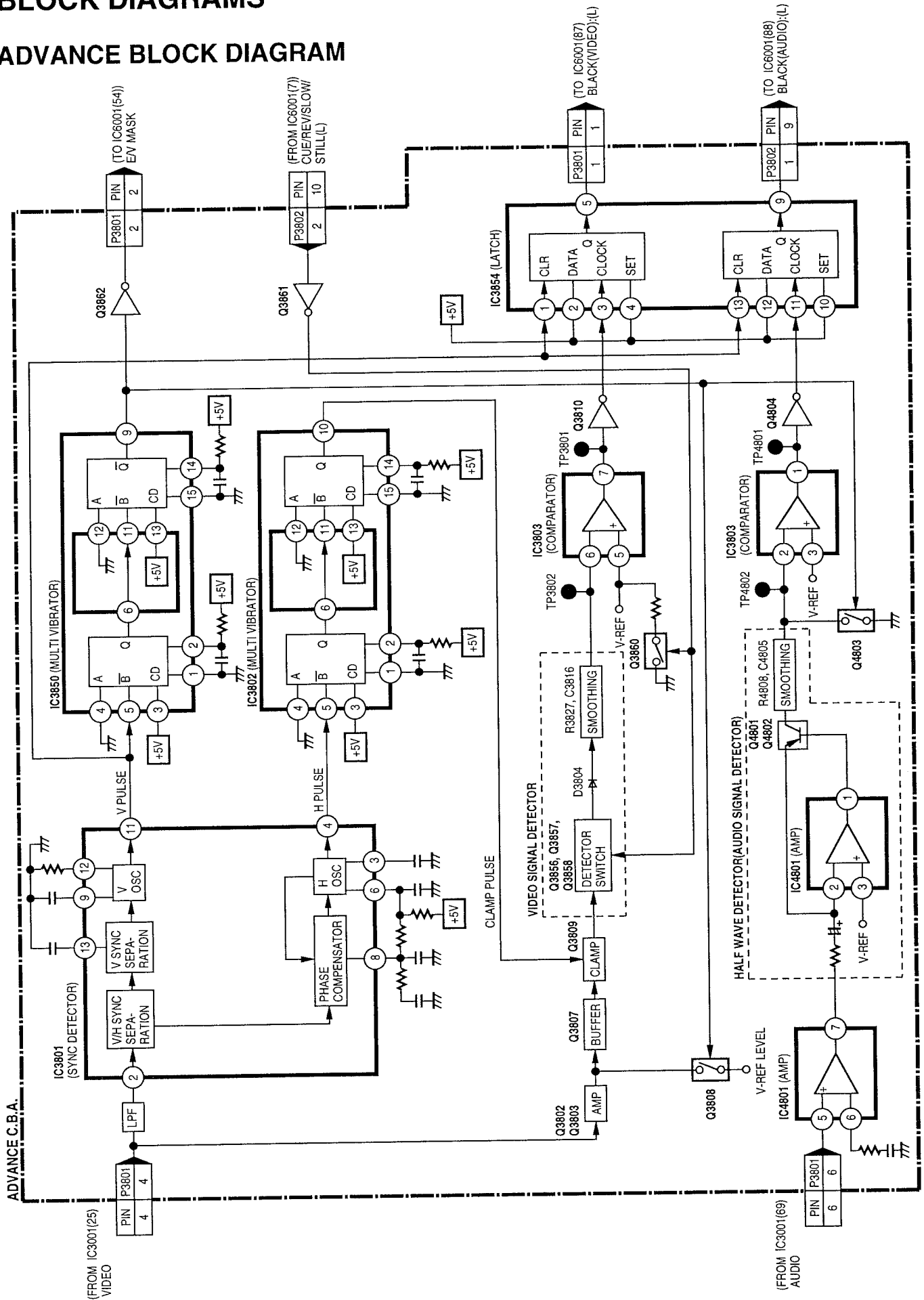


OPERATION	
IC	
IC6301	A-7
IC6401	B-2
IC6402	B-3
TRANSISTOR	
Q6401	B-2
CONNECTOR	
P6301	A-10
P6302	A-4
P6310	B-13
TEST POINT	
TP6301	A-8

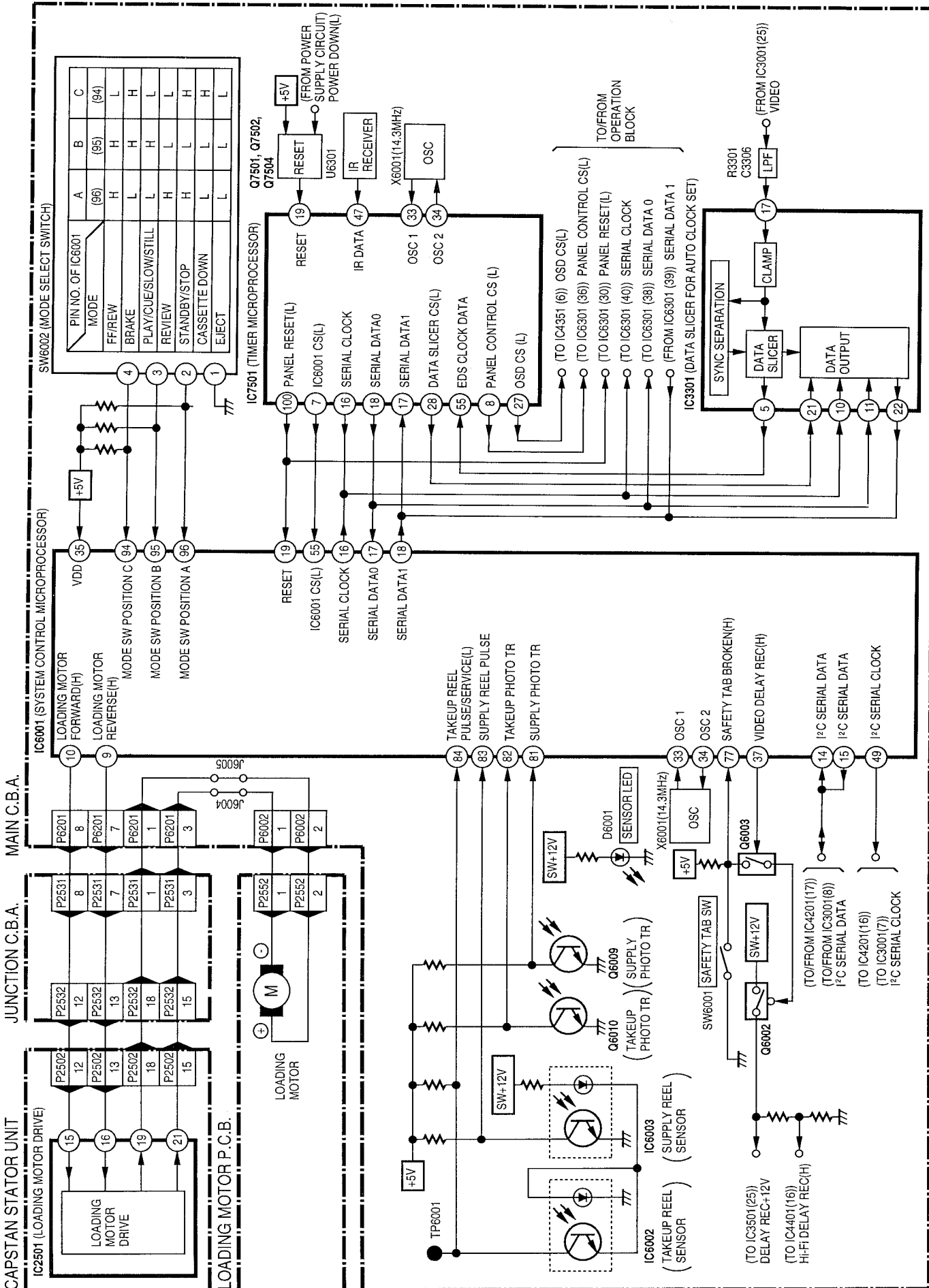
LEADLESS COMPONENT PARTS LOCATION GUIDE			
OPERATION C.B.A.			
R6310	A-3	R6406	A-3
R6315	A-7	R6407	A-3
R6316	A-7	R7801	A-1
R6317	A-7	R7802	A-1
R6318	A-7	R7803	A-2
R6358	A-8	C6307	A-7
R6401	B-3	C6308	A-1
R6402	A-2	C6401	B-3
R6404	B-2	C6403	B-3
R6405	B-2		

# BLOCK DIAGRAMS

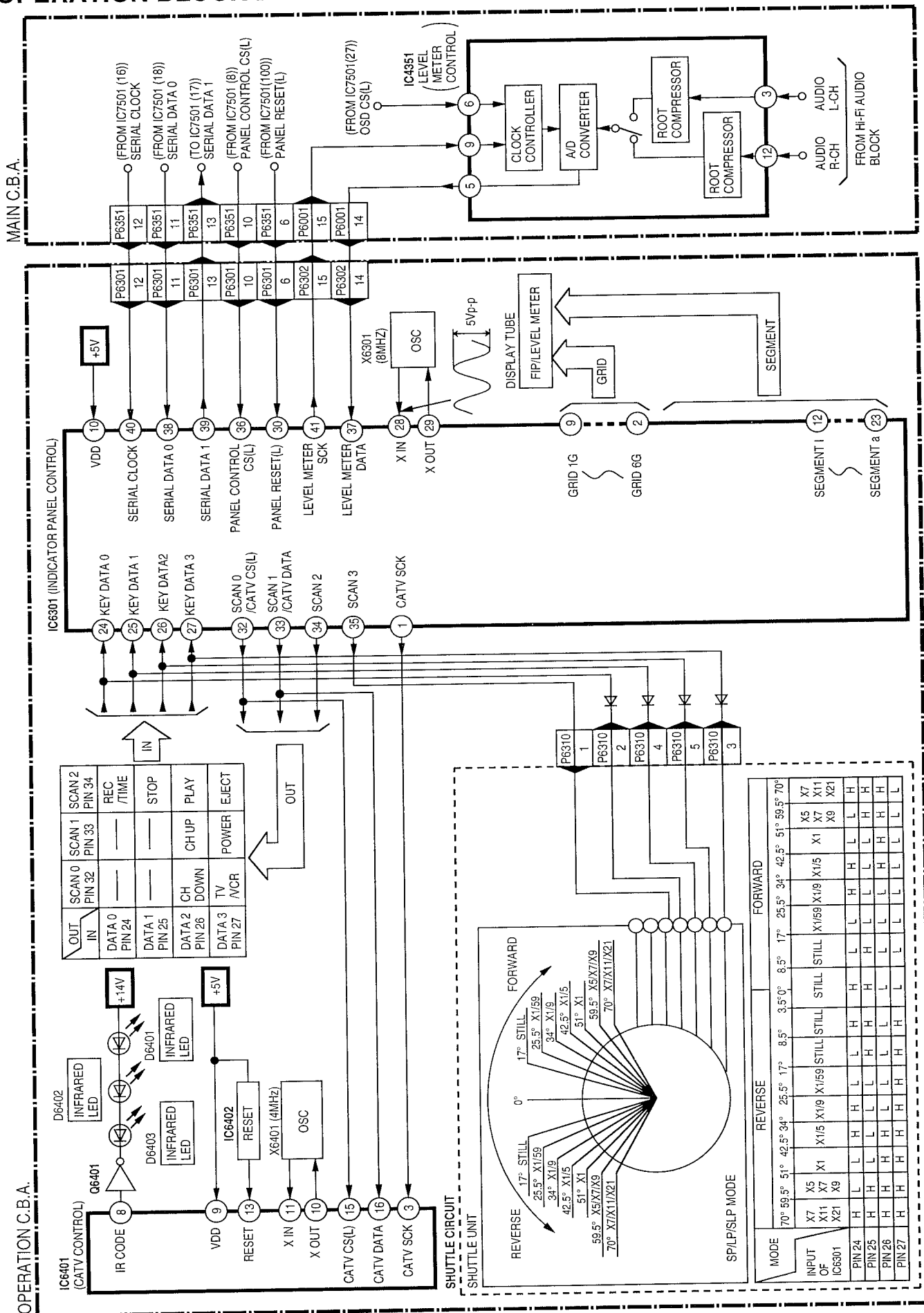
## ADVANCE BLOCK DIAGRAM



## SYSTEM CONTROL BLOCK DIAGRAM



### OPERATION BLOCK DIAGRAM



# TROUBLESHOOTING HINTS

## Advance Section

### HOW TO CONFIRM IF ADVANCE CIRCUIT IS WORKING.

Record any broadcast over 2minutes. Then, as recording continues, proceed with all troubleshooting.

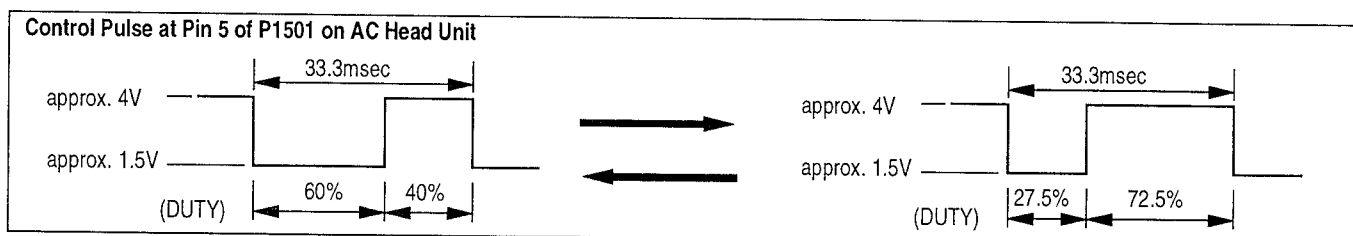
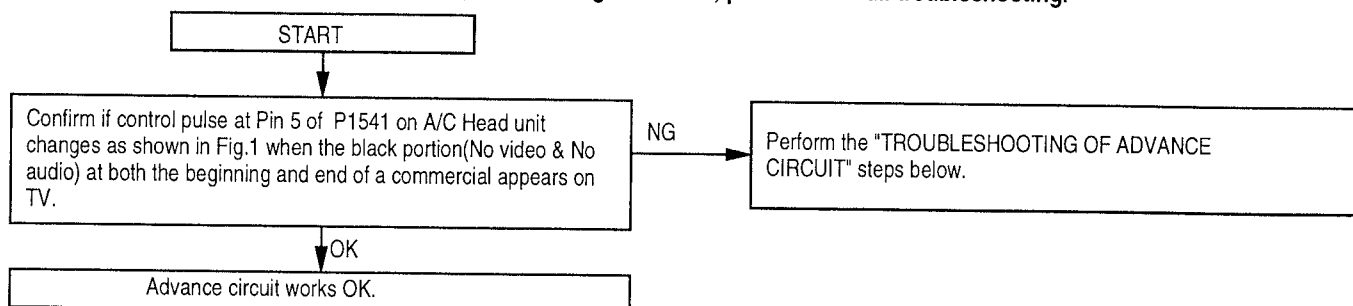


Fig.1

### TROUBLESHOOTING OF ADVANCE CIRCUIT

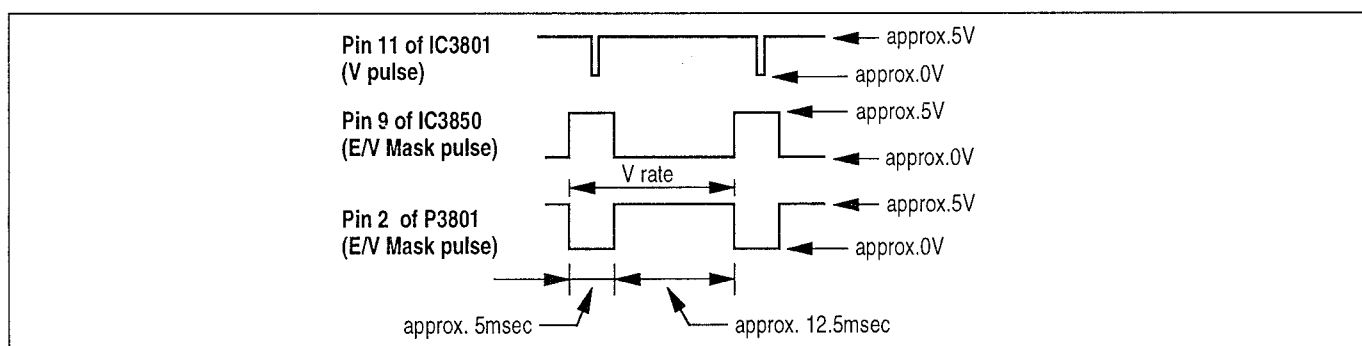
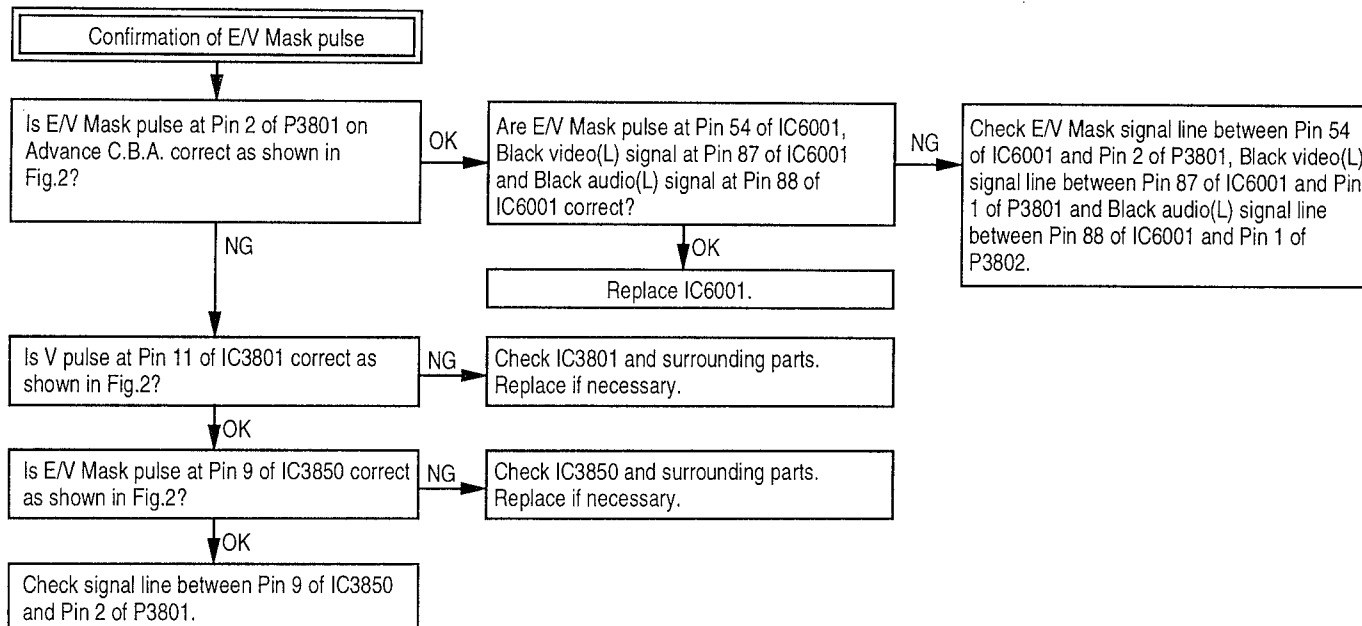


Fig.2

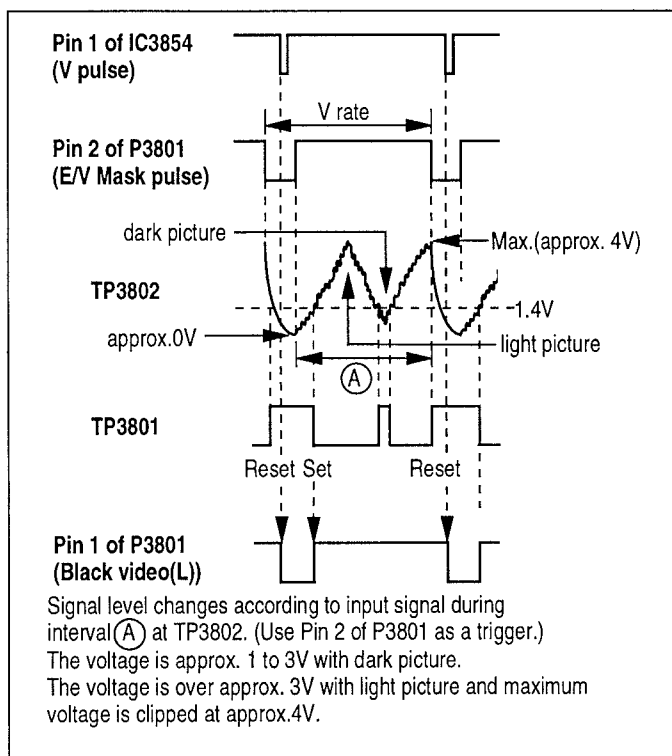
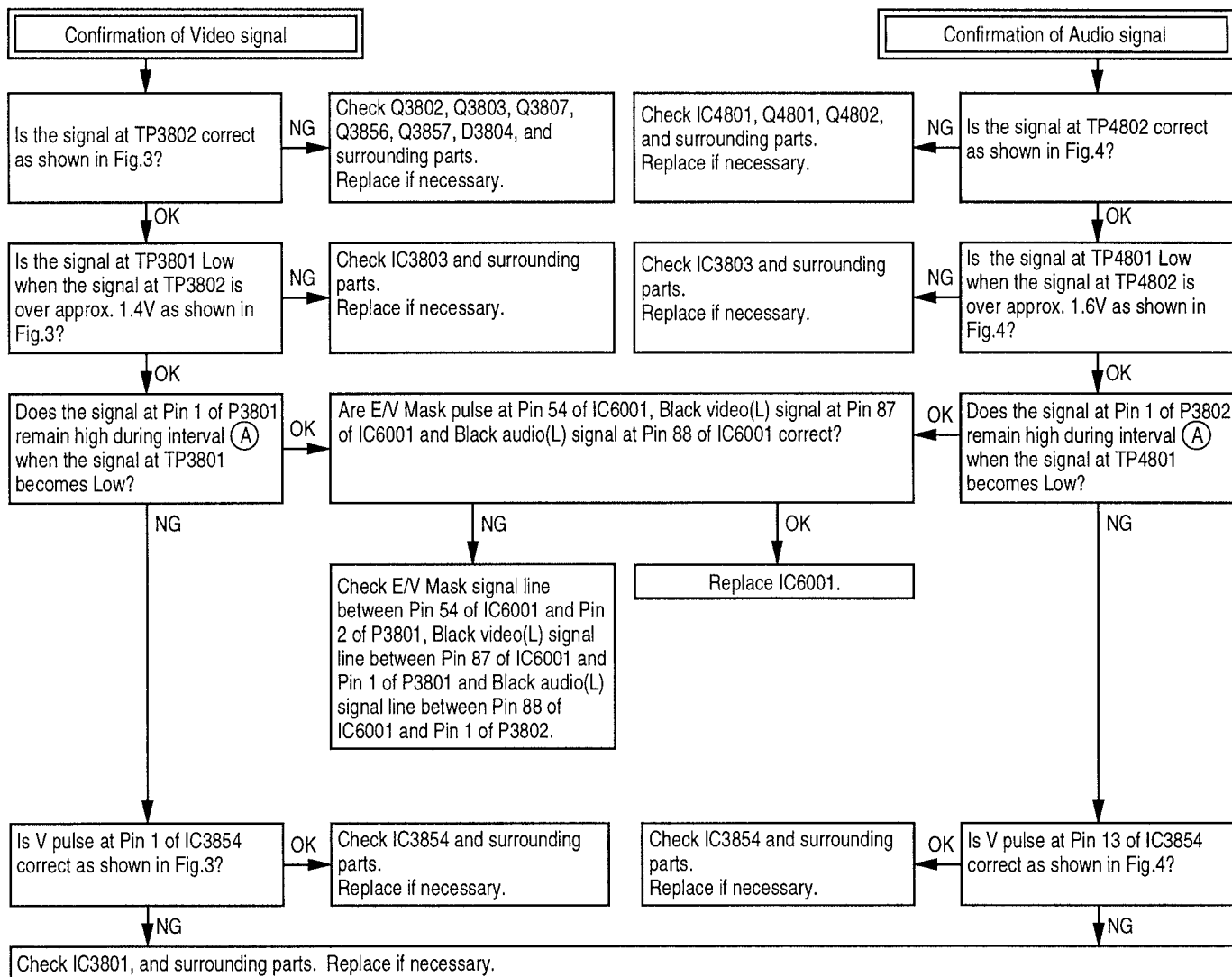


Fig.3

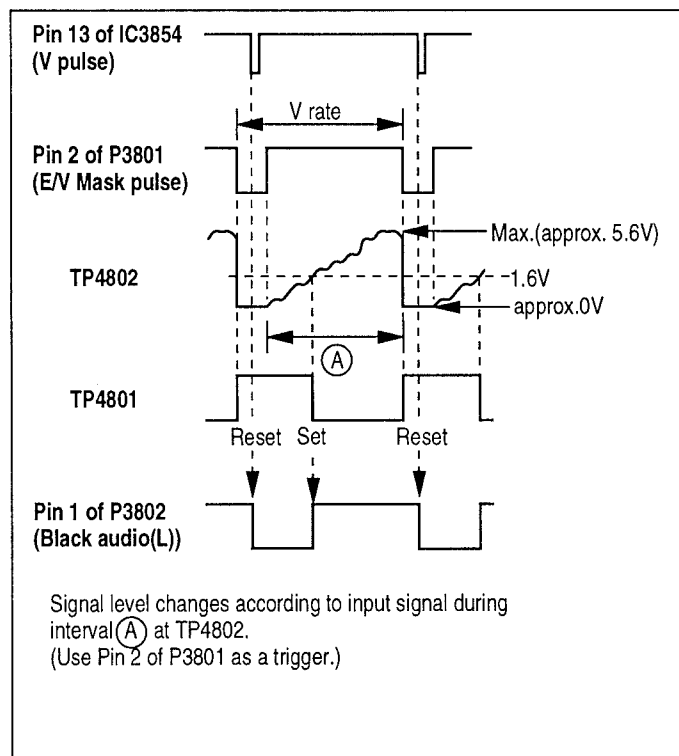


Fig.4

**Panasonic<sup>®</sup>**  
**MATSUSHITA ELECTRIC**